Installation Manual

Revision D

Legal Terms & Conditions

Disclaimer & Warranty

Purchaser of Motel o'Scope kit components understands and recognizes that this product requires adequate skills and judgement to complete a viable and working telescope enclosure. Purchaser also recognizes that completion of a telescope enclosure using the Motel o'Scope kit components requires the purchaser to acquire additional materials from other suppliers for which DWH Products makes no warranties or guarantees of suitability. Purchaser further recognizes and agrees that varied conditions related to the location, climate and security of the building site as well as purchaser supplied-materials may require the purchaser to make sole judgement about the suitability of using the Motel o'Scope kit for a telescope enclosure.

DWH Products warrants the Motel o'Scope kit components against defects in workmanship for a period of 1 year. DWH Products makes no warranties, expressed or implied in regards to the safety of any equipment housed within a telescope enclosure constructed of components of the Motel o'Scope kit from either theft or damage.

Purchaser agrees to indemnity and to hold DWH Products or its reseller harmless from any claim, action or demand arising out of or incident to the purchaser’s installation, equipment installed within or improper use of the Motel o'Scope kit product.

Introduction

Motel o'Scope is a pier-mounted telescope enclosure. Its small footprint makes it an ideal solution for observers and astrophotographers who would like to keep their equipment polar aligned and ready for use on a moment's notice.

Motel o'Scope consists of an enclosure base and cover. The enclosure base is an ingenious design of very high quality parts including many that are custom machined that clamps to a 12" concrete pier without bolts, anchors or fasteners. The cover is constructed using foil-faced foam board, aluminum reinforced edges and aluminum foil tape. Optionally, the cover may be finished using aircraft-quality dacron using a process that creates a UV barrier and a beautifully paintable surface. The super light-weight cover is also very strong.

Motel o'Scope is a do-it-yourself design with some components manufactured by DWH Products. The do-it-yourself design requires you to purchase materials from your local home construction store including the foam board as well as specialized hardware available from sources listed on the separate parts list. You can have the most basic enclosure assembled and working within 1-2 days after you have gathered the required parts. The dacron-covering process can be more involved and requires additional purchases from an aircraft supply house.

Motel o'Scope is adjustable in several ways. It can accomodate variations in pier diameter from approx. 11-1/2" to 12-1/4". It can be adjusted for piers that aren't perfectly concentric (round). The deck can be mounted offset in one direction to account for telescopes whose equipment load isn't exactly centered over the pier.

Motel o'Scope creates a great environment to protect your equipment. The cover fits onto the enclosure base using a positive seal against a neoprene foam perimeter. Properly built, your telescope will sit in a dust-free and insulated space. The use of aluminum foil-faced foam board and other aluminum features create a UV resistant space that reflects solar radiation. Paint and/or the optional dacron covering adds more UV protection, insulation and protection from dings and nicks.

Motel o'Scope is an alternative for those enthusiasts that don't have the real estate for an observatory. The footprint at ground level is 12" while the footprint at waist level is 26" x 50". The cover is 48" tall. The enclosure deck provides a convenient space to mount power strips, ccd equipment, sensors, usb and ethernet hubs, alarm detectors for security and more. The only constraint that the deck places on an observer is that you might be required to use right-angle mounted eyepieces.

Motel o'Scope is as secure as most small observatories. Although it comes with latches that accept deadbolt locks, a dedicated thief could break into it. We recommend that you place Motel o'Scope in a controlled area where fences, security lighting and passive methods prevail.

Requirements

Customer Supplied Materials

See the separate parts list with sources.

A custom joining plate kit (16 custom plates) is available from Dan's Pier Top Plates.

Optional Materials - Painting the Cover

- Flat Aluminum Primer (eg. Rust-Oleum Brand).

- Protective Enamel Spray (eg. Rust-Oleum Brand).

Optional Materials - Dacron Covering

(1) Dacron Envelope - Available from Dan's Pier Top Plates
- Alternatively - 6 yds x 64" x 2.7oz Dacron Fabric.
- Dacron supplies are available from Aircraft Spruce & Supply.

(50) ft Dacron Seam Tape x 3" with pinked edges (included with Dacron Envelope Kit)
- Dacron supplies are available from Aircraft Spruce & Supply.

(1) pint latex/neoprene contact adhesive
- DAP Weldwood Nonflammable Contact Cement.
- DAP products are available at The Home Depot.
- Alternatively - Stewart Systems EkoBond
- Stewart Systems products are available directly or Aircraft Spruce &
- Supply.

Requirements (continued)

Optional Materials - Dacron Covering (continued)

(1) quart latex-based fabric filler/primer
- Stewart Systems EkoFill.
- Stewart Systems products are available directly or Aircraft Spruce &
- Supply.

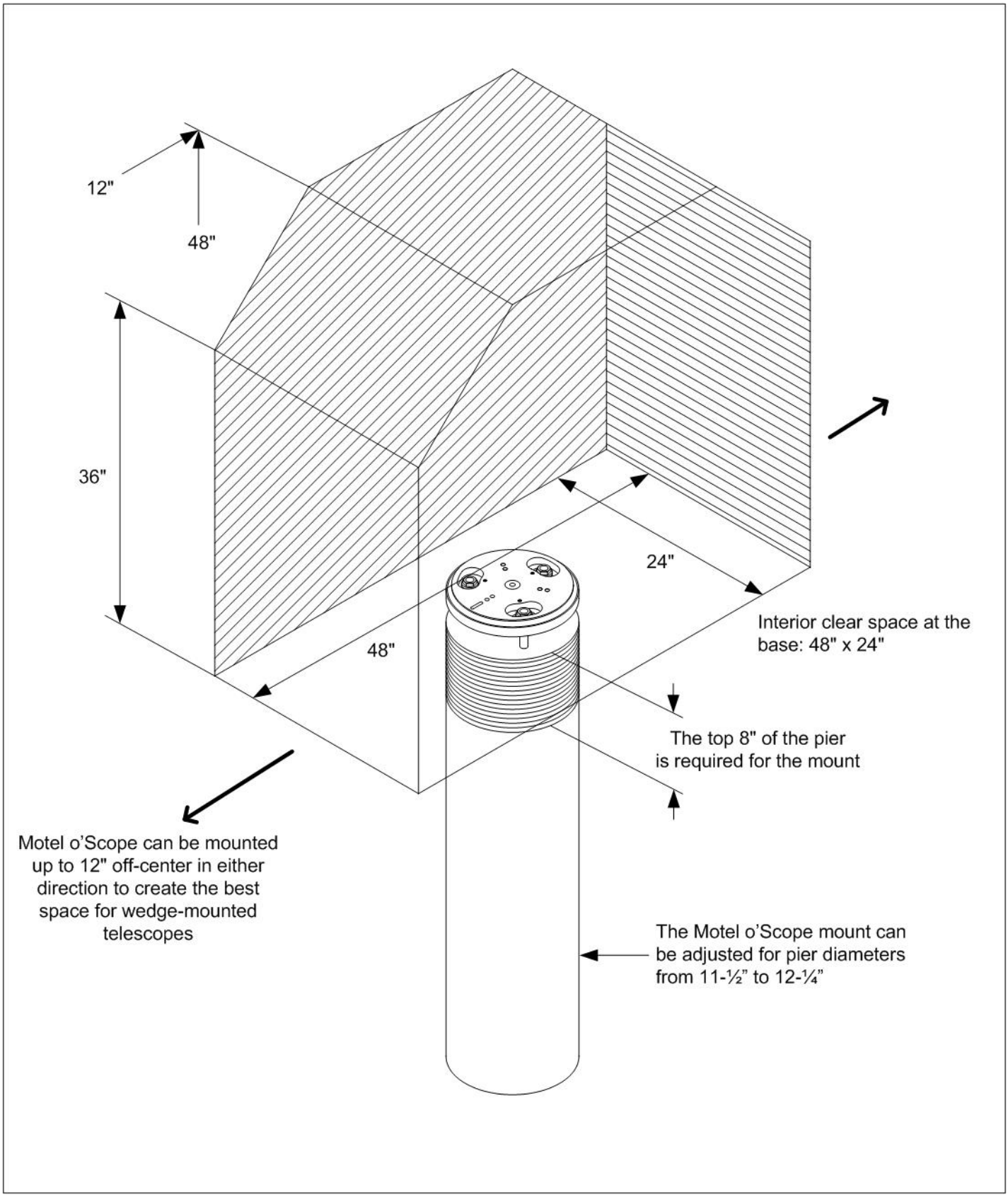
(1) quart exterior acrylic latex paint
- Available at The Home Depot

- Foam brushes, mini rollers, 320 grit sandpaper

Tools

- Hex Wrench for 1/4"-20 (Included in the kit)
- Phillips Screwdriver
- Drill and drill bits (5/32", 7/64", 1/4")
- Hole Saw (1" to 1-1/2")
- Spirit Level and Right Angle Tool
- Measuring Tape
- Utility Knife with long extendible blade
- Adjustable Wrench(s)
- Scissors
- Metal Shears or Heavy-Duty Scissors
- Straight Edge

Requirements (continued)



Parts List

See the separate parts list

Preparation

The Foil Faced Foam Board may have an oily residue on its surface that will make it harder for the aluminum tape to stick. Washing the surface with soap and water with improve the construction process greatly.

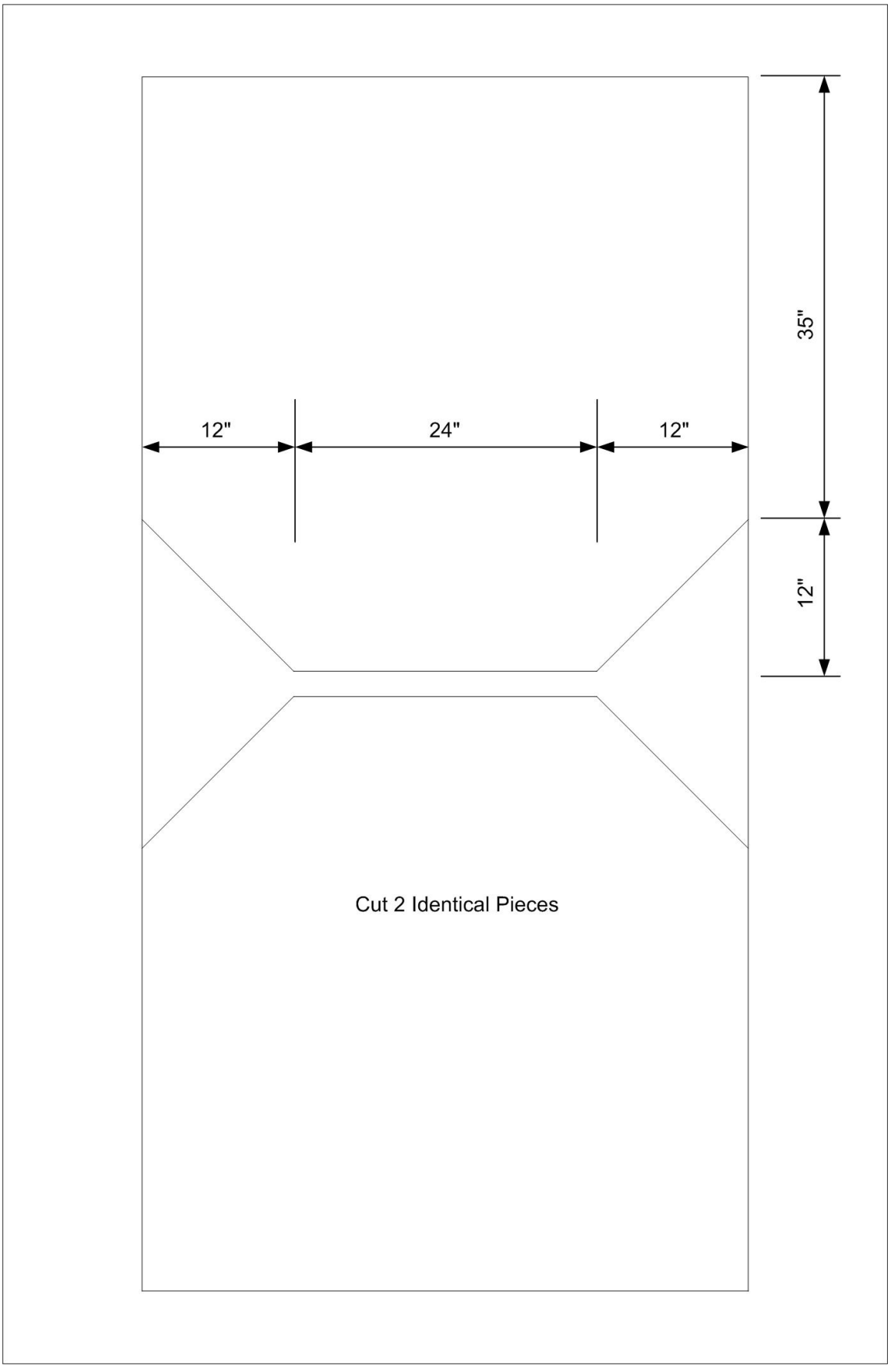
Use Cut Patterns 1 & 2 to create the pattern for the pieces of the Motel o'Scope cover.

Use a utility knife with an extendible blade and a straight edge to cut the required pieces. Extend the blade long enough to cut cleanly through the entire thickness of the foam board.

Set the pieces aside.

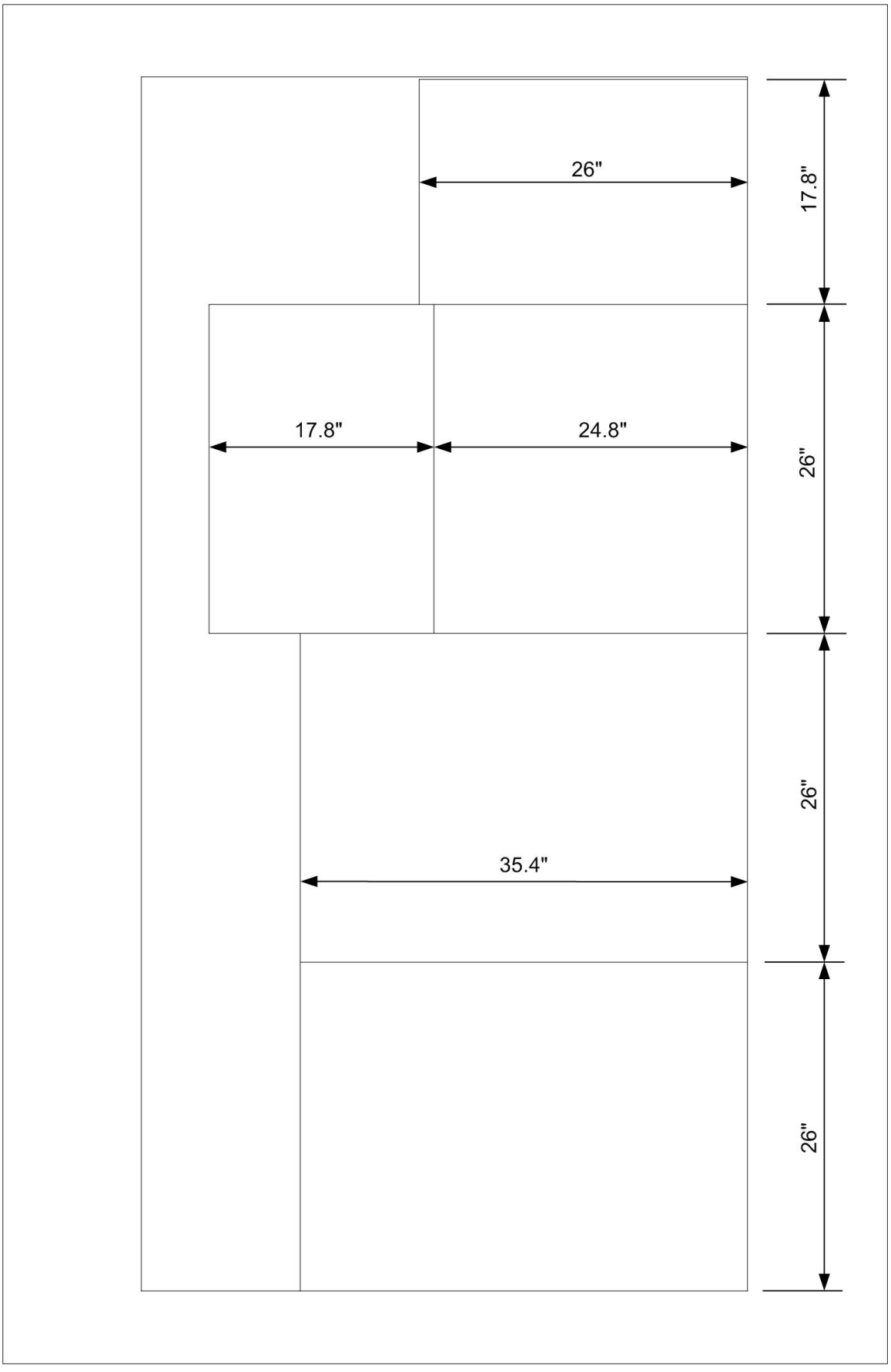
Cut Pattern 1

Foil Faced Foam Board - 4' x 8' x 1" Thick



Cut Pattern 2

Foil Faced Foam Board - 4' x 8' x 1" Thick



Step 1

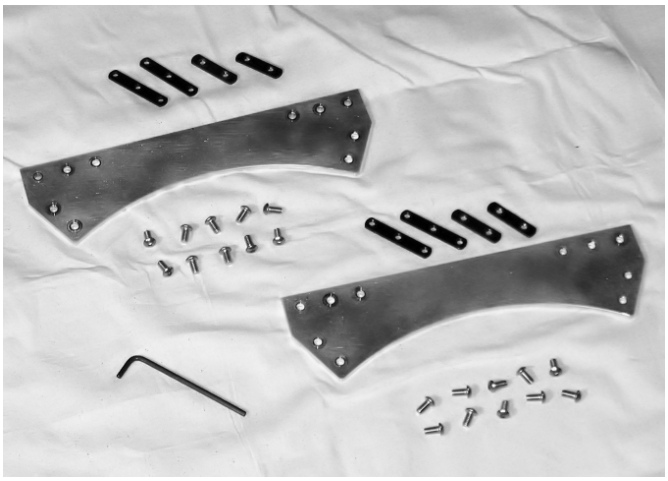


Figure 1

Required Parts:

(2) Connector Plate A
(4) Double Slot Nut
(4) Triple Slot Nut
(10) Cap Screw x 1/2" long

Install Slot Nuts loosely. Refer to Figure 2.

The nut flange should always face outward.

Measure and mark the center of each Connector Plate A. Refer to Figure 3.

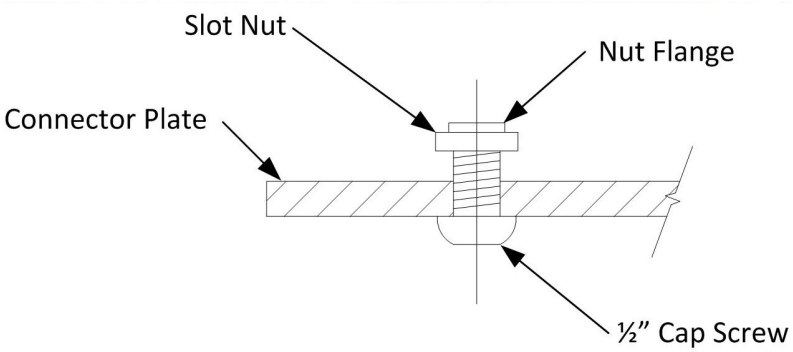


Figure 2 - Typical

Figure 3

Completed Assemblies.

Step 2

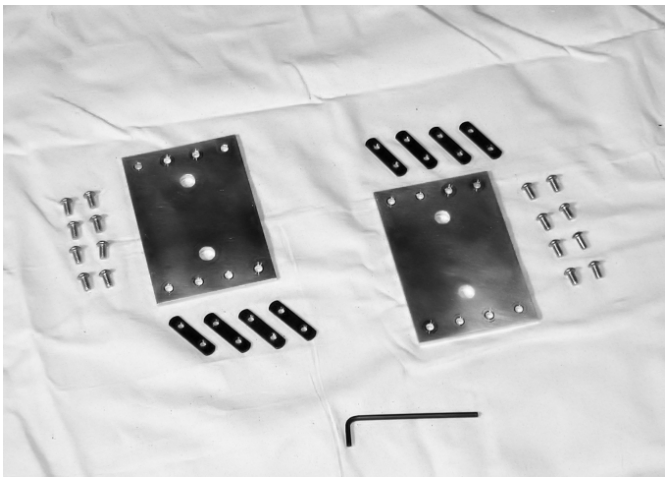


Figure 4

Required Parts:

(2) Connector Plate B
(8) Double Slot Nut
(16) Cap Screw x 1/2" long

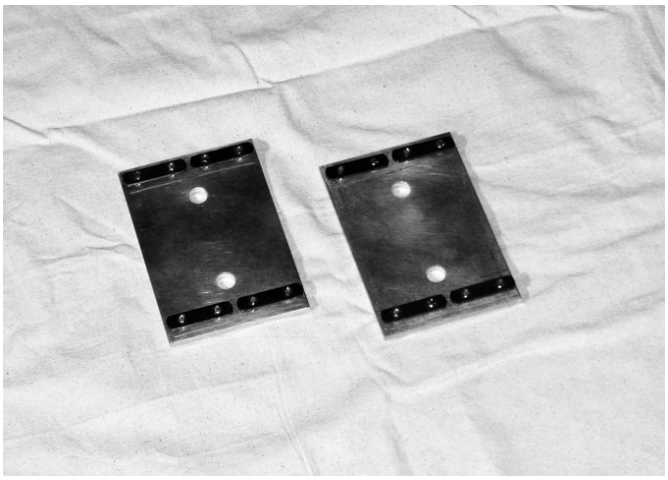


Figure 5

Install Slot Nuts loosely.

Step 3

Figure 6

Required Parts:

(2) Connector Plate A Assembly
(2) T-Slot Bar x 26" (610mm)

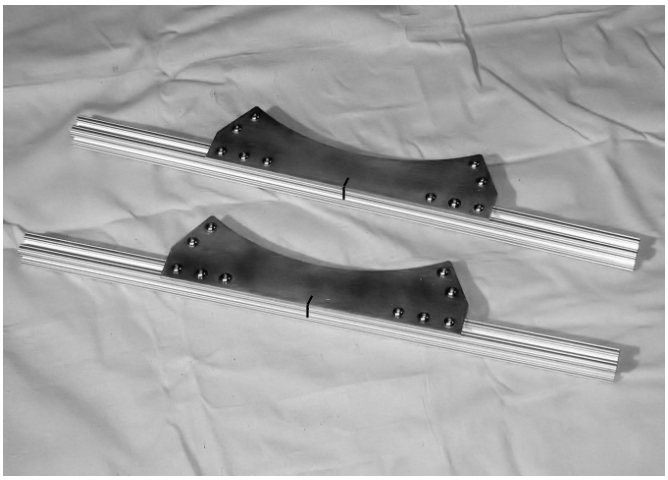


Figure 7

Measure and mark centerline of T-Slot Bar.

Slide Connector Plate assembly into T-Slot Bar.

Match centerlines of Connector Plate and T-Slot Bar and tighten cap screws.

Step 4

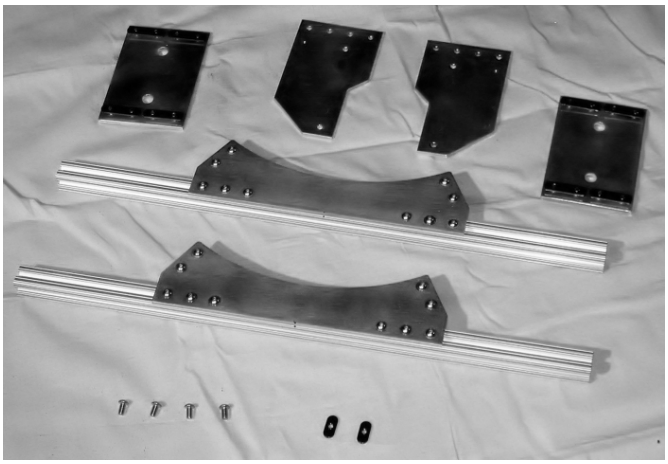
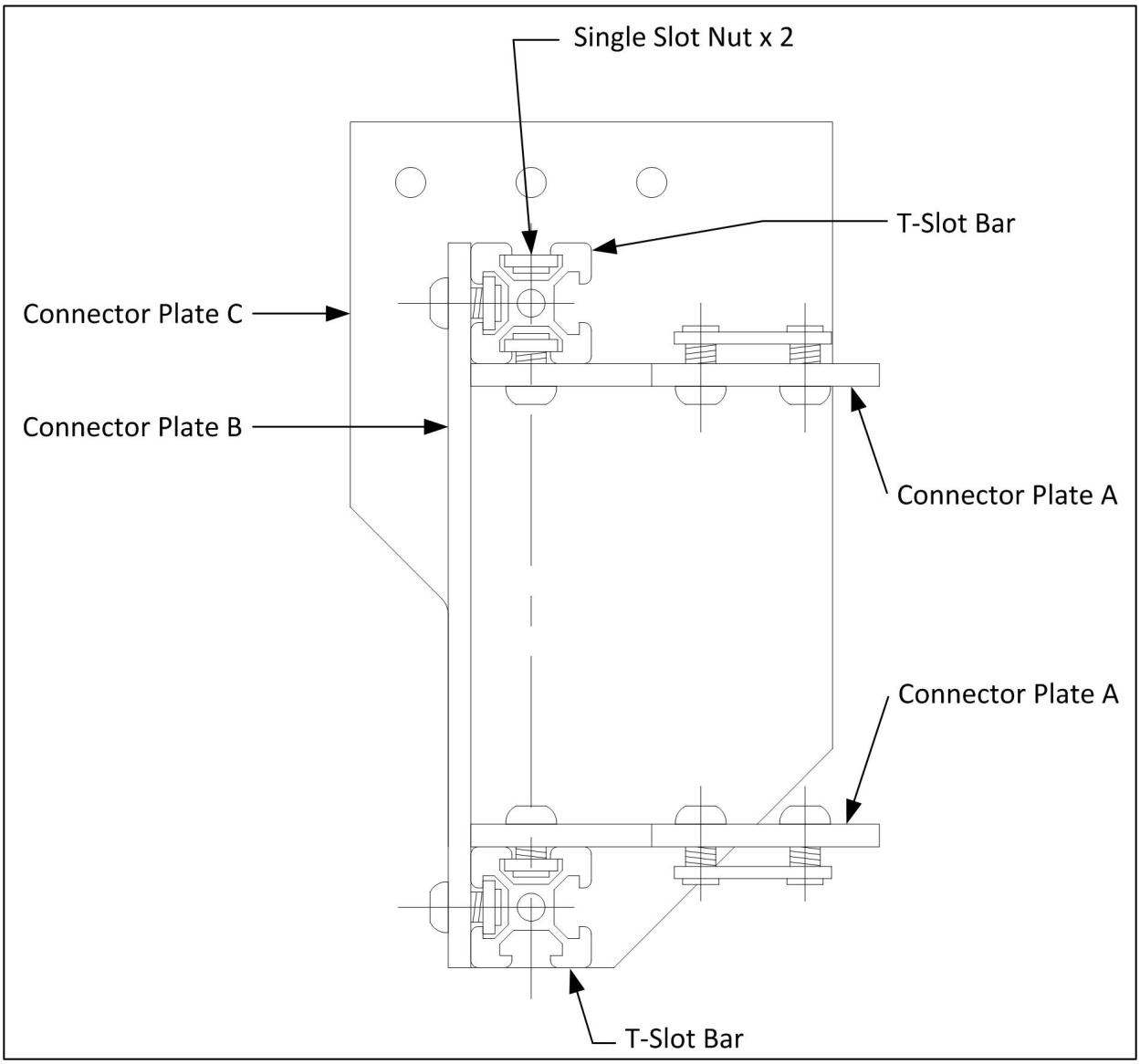


Figure 8

Required Parts:

(2) T-Slot Bar / Connector Plate A Assembly
(2) Connector Plate B Assembly
(2) Connector Plate C
(2) Single Slot Nut
(4) Cap Screw x ½" long

Figure 9



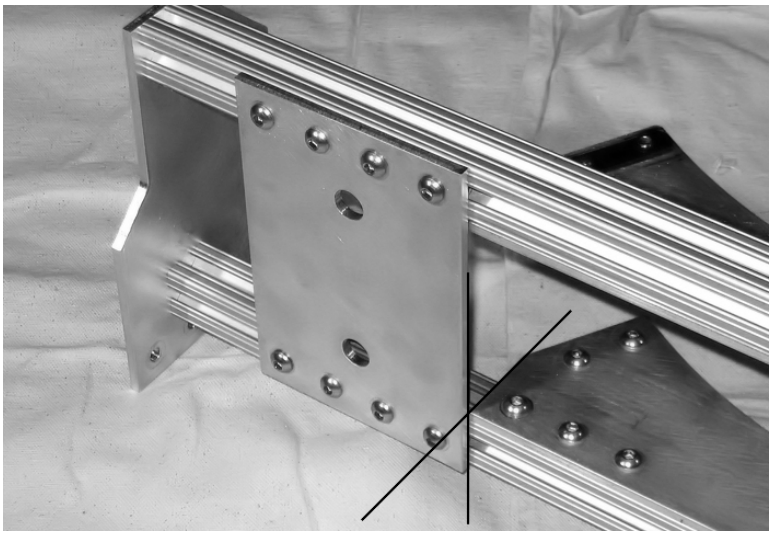


Figure 10

Assemble per Figure 9 and 10.

The edge of Connector Plate B should align with the edge of Connector Plate A as in Figure 10.

The (2) Single Slot Nuts should be inserted into the top T-Slot Bar before installing the end caps (Connector Plate C).

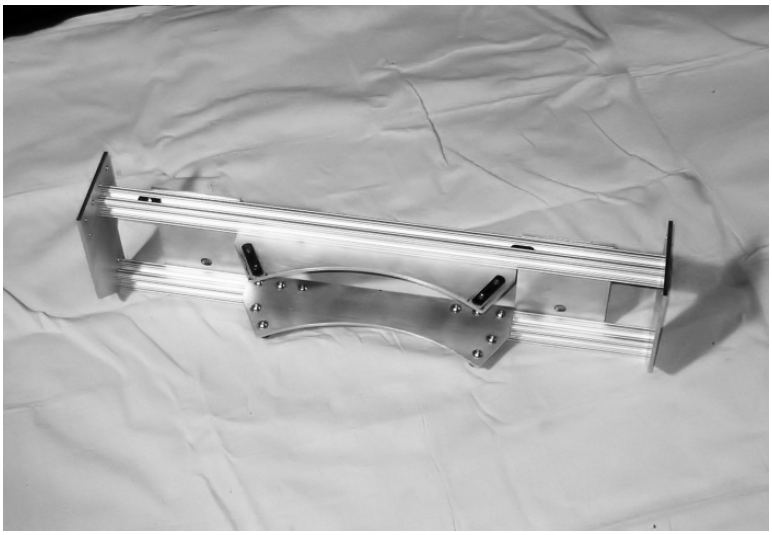


Figure 11

Completed Assembly

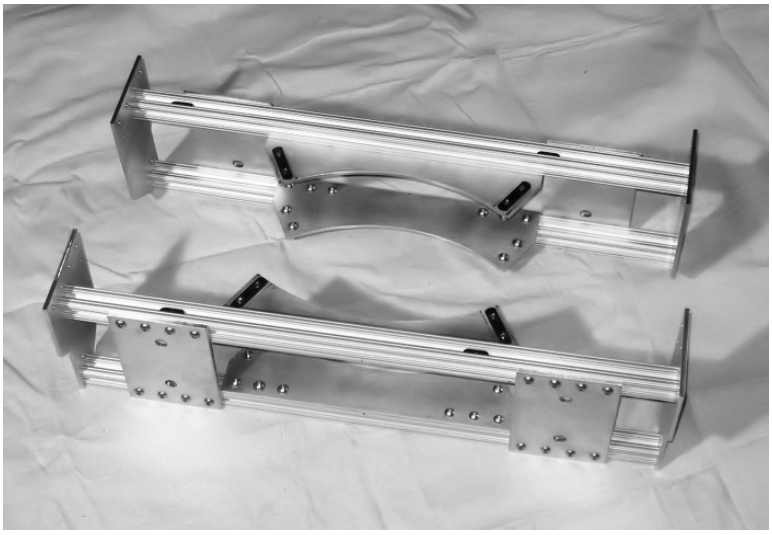


Figure 12

Repeat Steps 1-4

Step 5

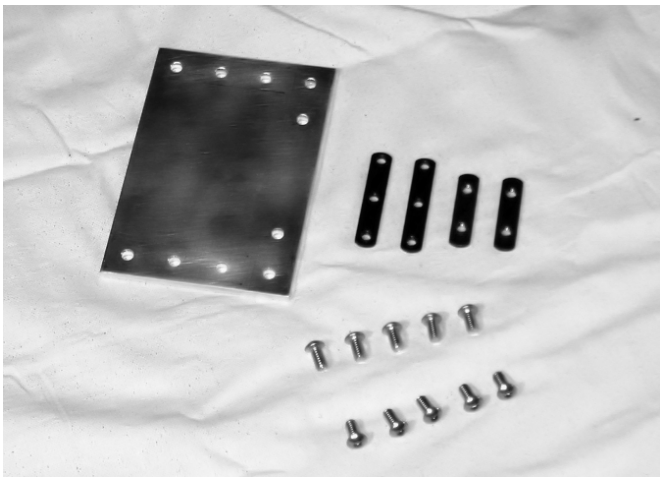


Figure 13

Required Parts:

(1) Connector Plate D
(2) Triple Slot Nut
(2) Double Slot Nut
(10) Cap Screw by 1/2" Long

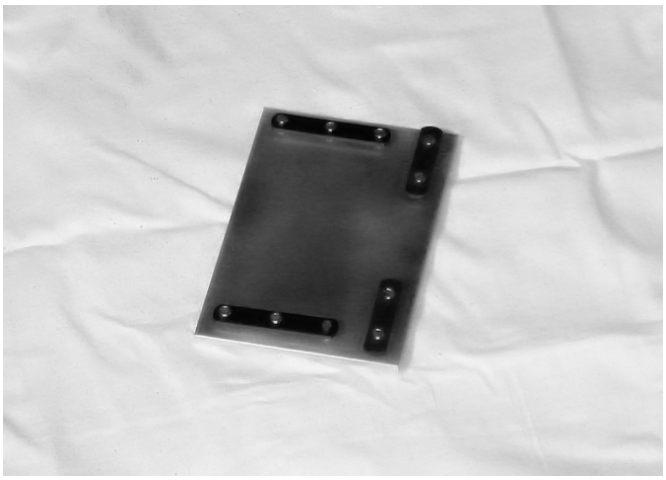


Figure 14

Install Slot Nuts loosely.

Step 6

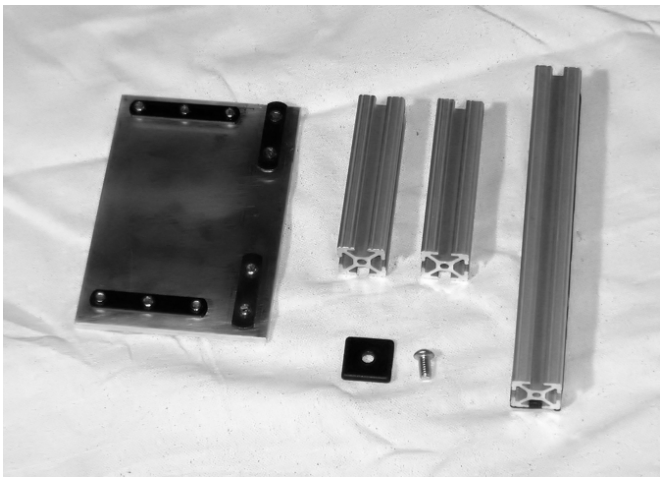


Figure 15

Required Parts:

(1) Connector Plate D Assembly
(2) T-Slot Bar x 4" long (102mm)
(1) T-Slot Bar x 8" long (203mm)
(1) Plastic End Cap
(1) Cap Screw x 1/2" long
(1) Neoprene Foam Strip 1/4" x 8" (203mm)

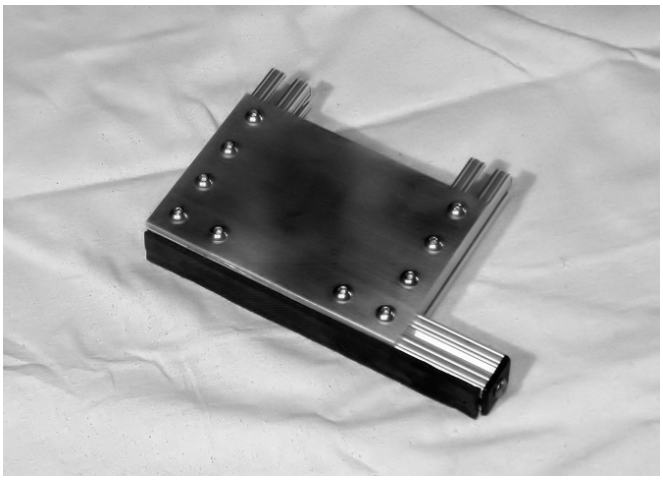


Figure 16

Assemble per Figure 16.

Attach neoprene foam strip as shown.

Repeat Steps 5-6

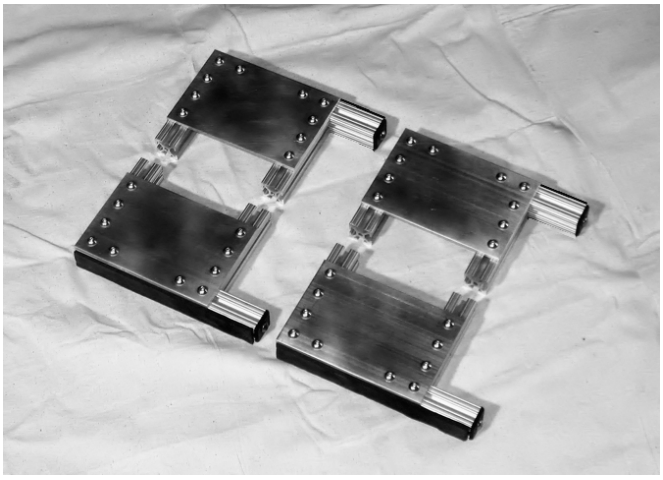


Figure 17

(2) Left-Hand Assemblies

(2) Right-Hand Assemblies

Step 7

Figure 18

Mount Connector Plate D assemblies as shown

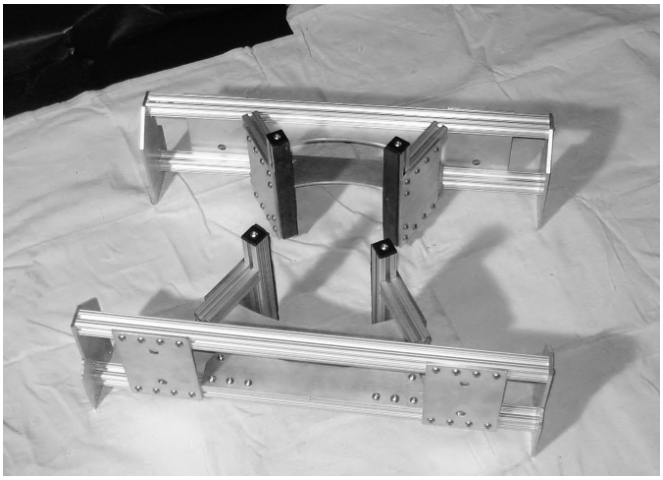


Figure 19

Completed base assemblies (shown upside down)

Step 8

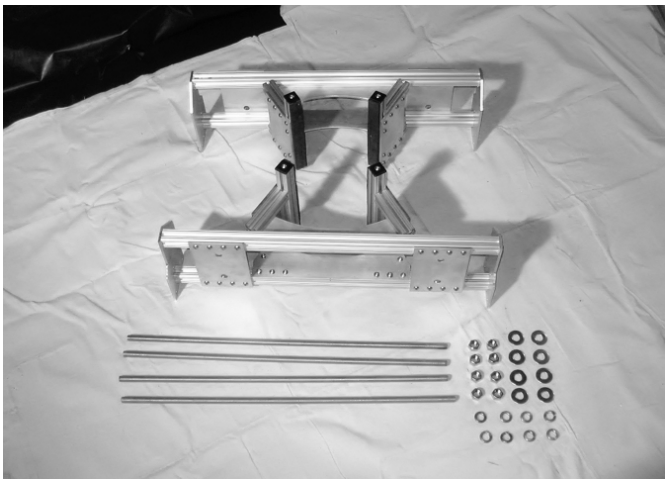


Figure 20

Required Parts:

(2) Base Assemblies
(4) 1/2" Threaded Rod x 26" long (610mm)
(8) 1/2" Nut
(8) Fender Washer
(8) Lock washer

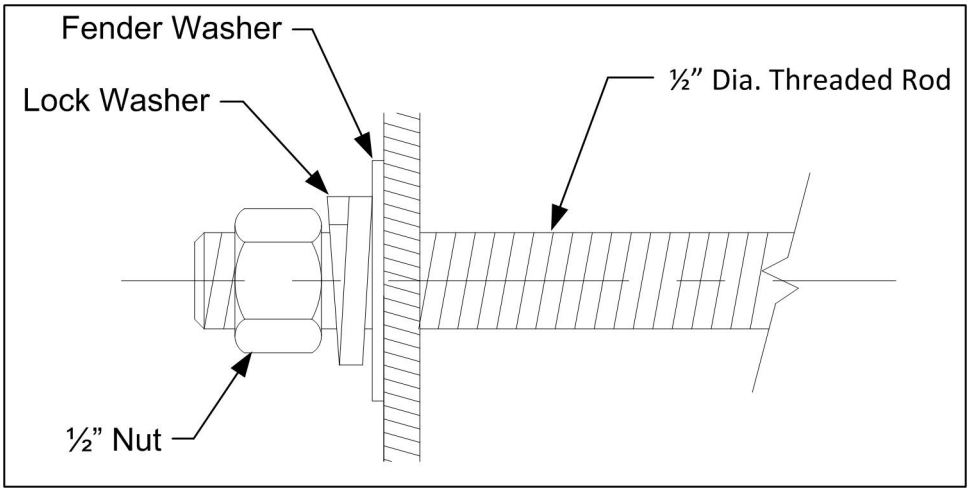


Figure 21

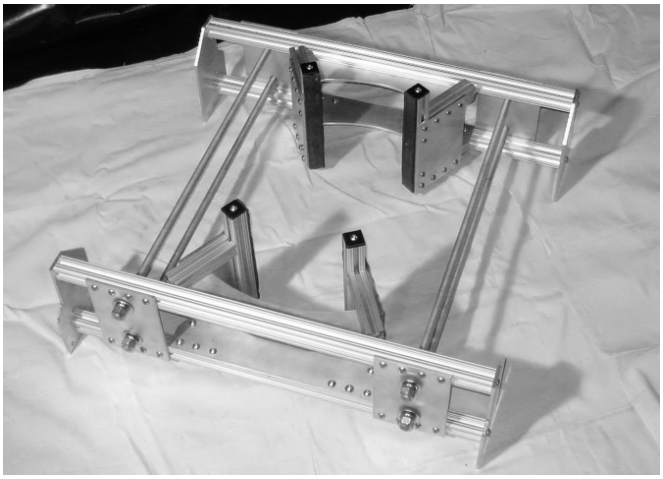


Figure 22

Install (4) threaded rods as shown.

Install nut and washers as shown in Figure 21.

Assembly shown upside down.

Step 9

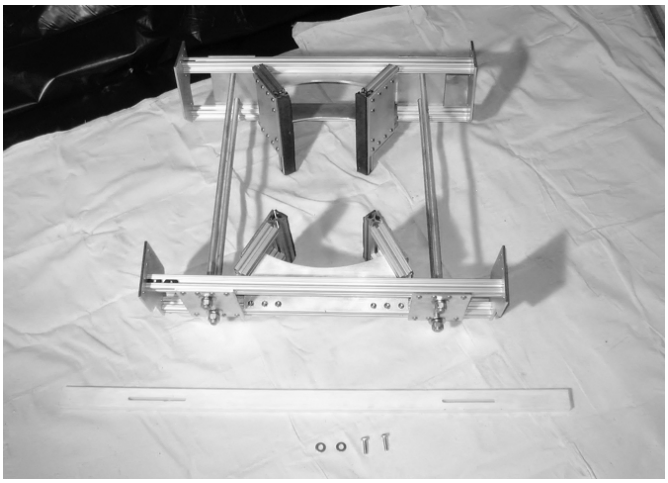


Figure 23

Required Parts:

(1) Base Assembly
(1) Wooden Brace
(2) 1/4" Hex Head Screw x 1" long (25mm)
(2) 1/4" Washer

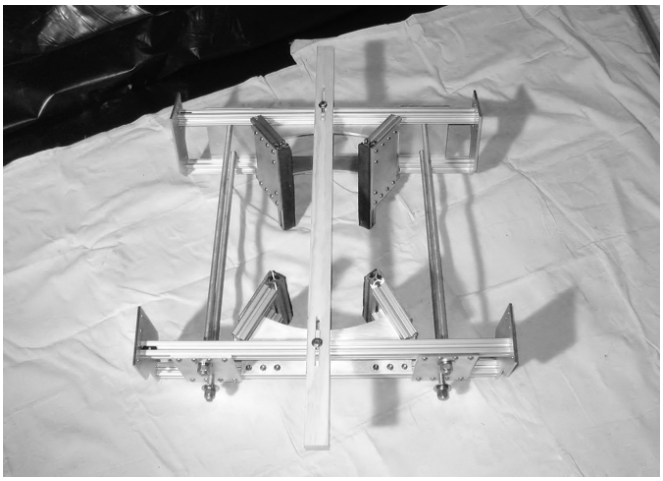


Figure 24

Mount the (2) hex head screws and washers through the slots in the temporary wood brace and into a loose slot nut.

Step 10

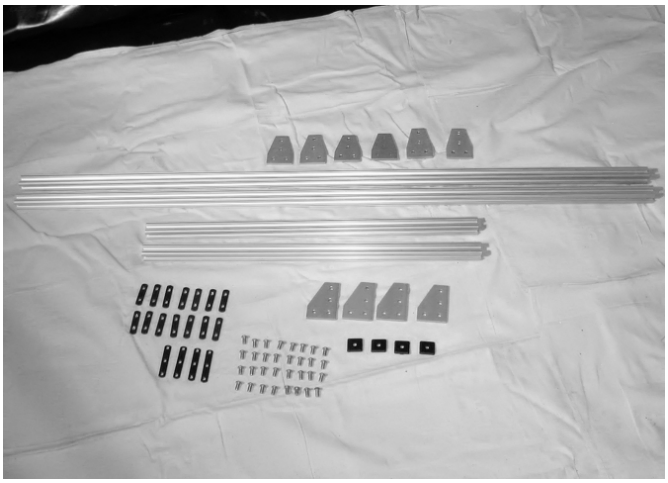


Figure 25

Required Parts:

(2) T-Slot Bar x 48” long (1219mm)
(2) T-Slot Bar x 26” long (610mm)
(6) Connector Plate E
(4) Connector Plate F
(4) Triple Slot Nut
(14) Double Slot Nut
(4) Plastic End Cap
(32) Cap Screw x ½” long

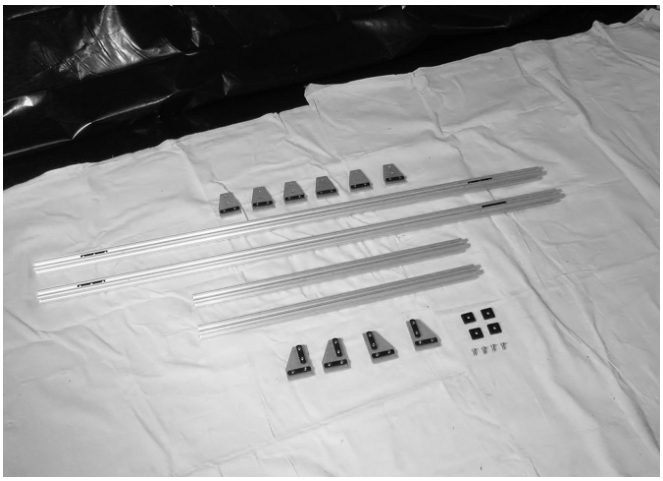


Figure 26

Insert (2) triple slot nuts in each 48” T-Slot Bar. Insert them both into the same slot.

Mount (1) triple slot nut along the bottom of each connector plate E. Mount them loosely.

Mount (2) double slot nuts onto each connector plate F. Make (2) right-hand versions and (2) left-hand versions. Mount them loosely.

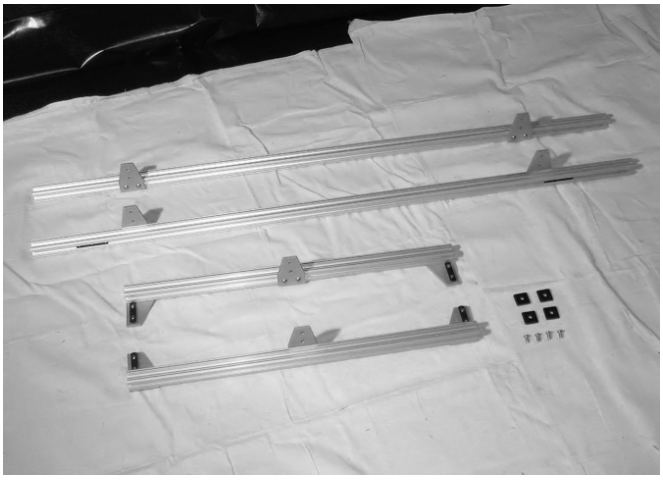


Figure 27

Mount (6) connector plates E as shown in Figure 27.

Mount (4) connector plates F as shown in Figure 27.

Step 10 (continued)

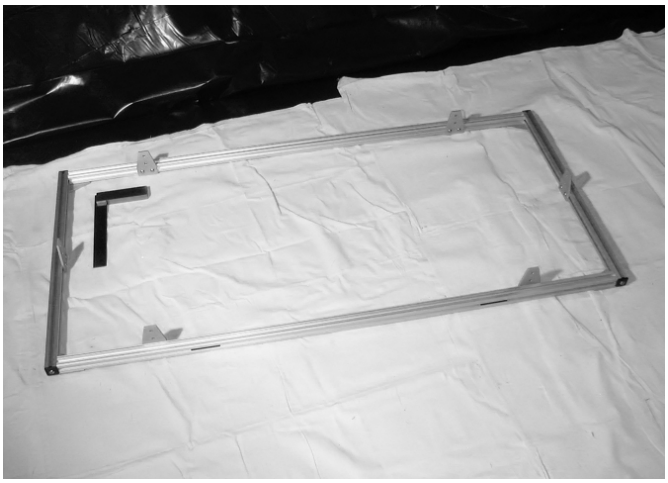


Figure 28

Assemble deck frame as shown. Note that connector plates E are on the inside of the frame. Connector plates F are on the underside of the frame.

Install plastic end caps.

Make sure frame is square.

Final Assembly of the Base

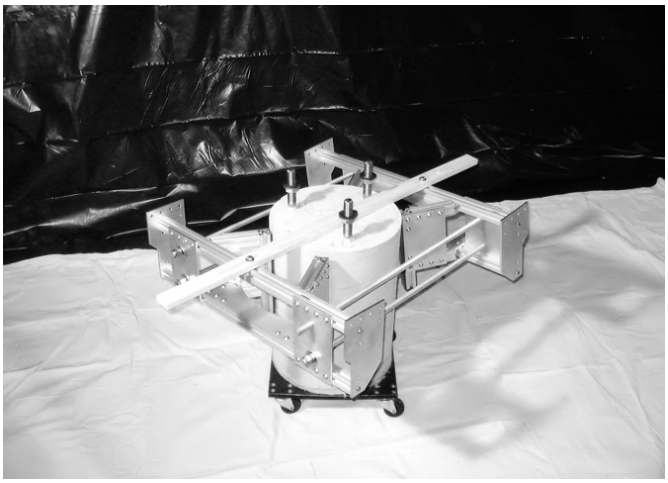


Figure 29

If your concrete pier has a pier plate mounted to it then remove.

Use the wood brace as a handle to lift the assembly up and over the concrete pier. The wood brace will hold the assembly in place while you continue to adjust it.

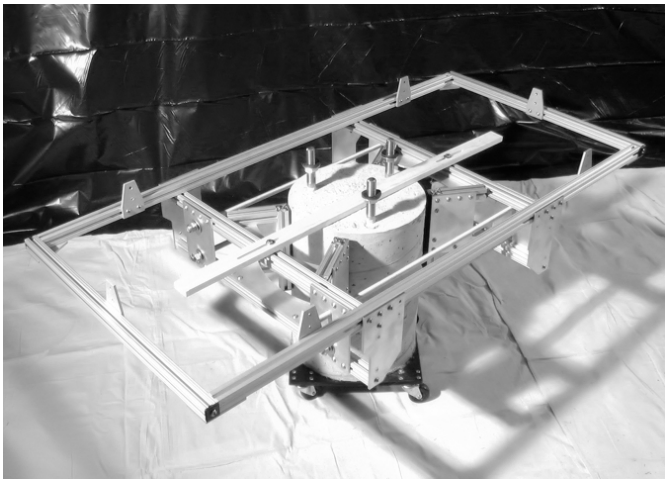


Figure 30

Don’t tighten the base yet.

Mount the deck frame to the base using (12) ½” cap screws. Align the deck frame roughly in the center. The screws should be engaged but not tightened, allowing the deck frame to slide back and forth.

The deck frame will help keep things lined up properly as the process of clamping the base assembly to the pier progresses.

Begin tightening the nuts on each of the (4) threaded rods. Tighten each nut a little in turn. As the assembly begins to clamp onto the concrete pier, adjust the base assemblies so that they are level with the top of the pier. Check periodically to ensure that everything is level and square. The neoprene foam in contact with the pier should compress until it is about 1/16” thick (1.5mm). Don’t over tighten to the point of warping the aluminum T-Slot bars, however the base will feel very rigid and secure when it’s tightened sufficiently.

Refer to figures 31 and 32.

Final Assembly of the Base (continued)

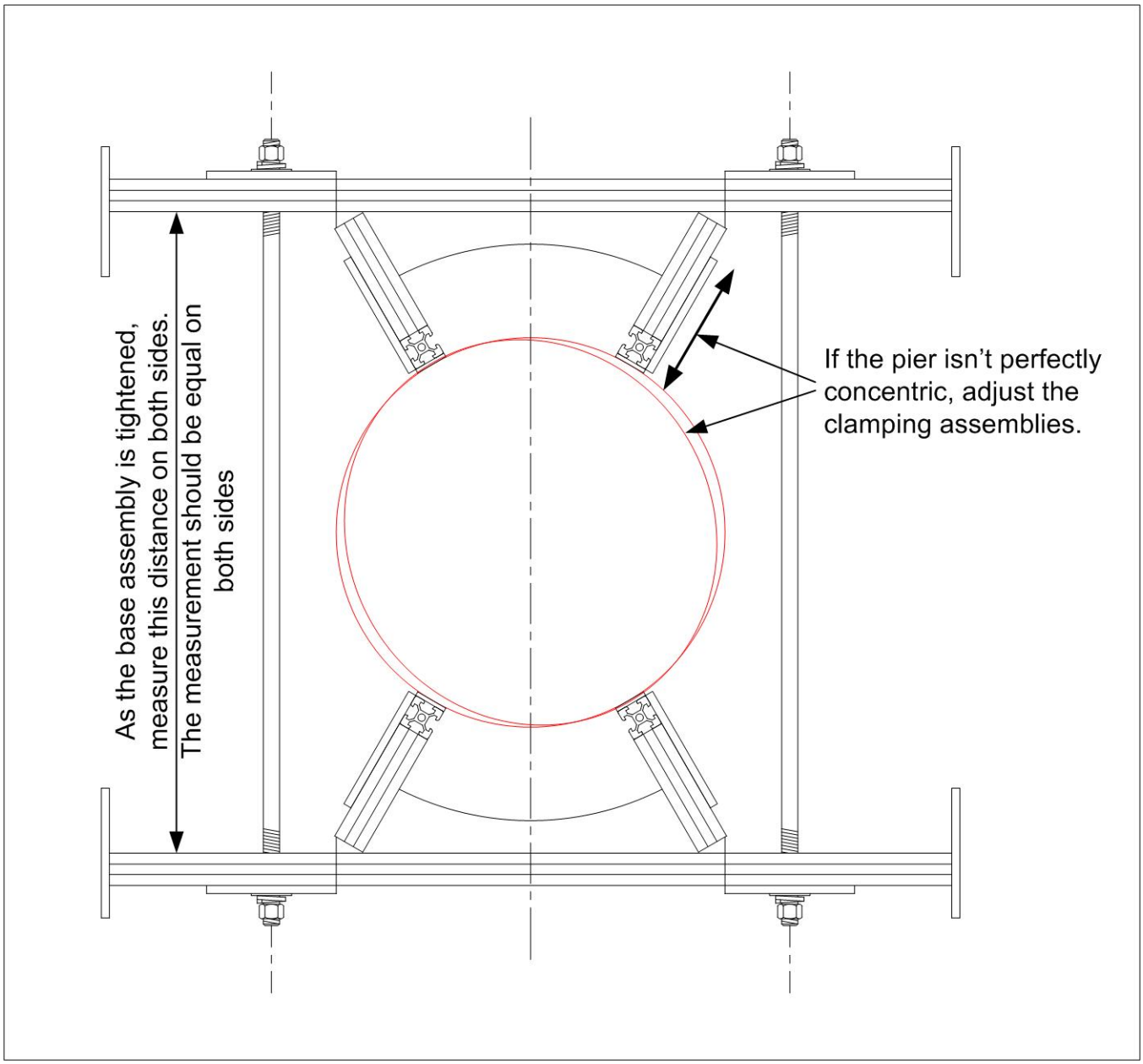


Figure 31

Final Assembly of the Base (continued)

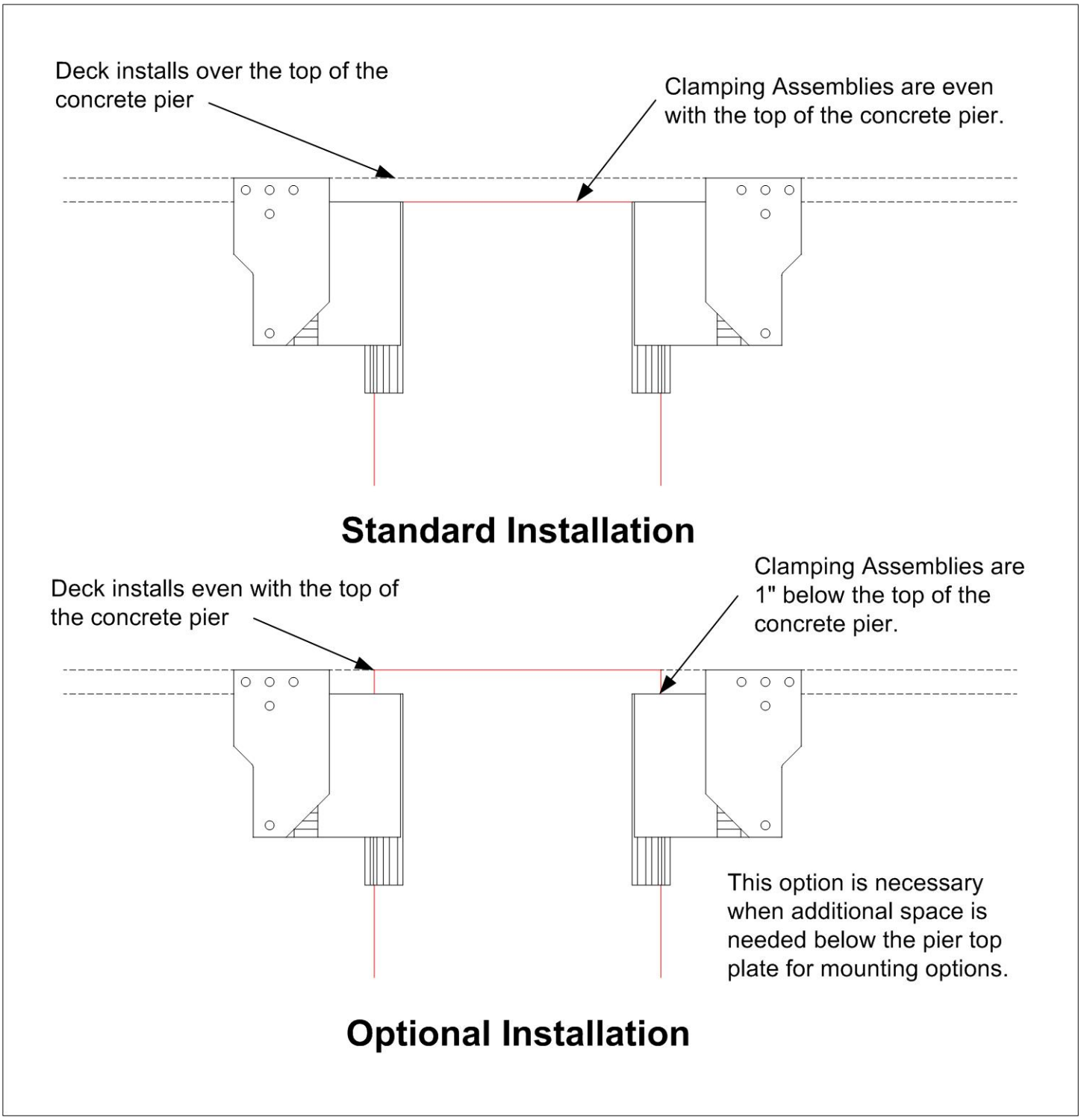


Figure 32

Cover Construction

A Note about Burnishing

The construction of the Motel o'Scope cover will require a good bond between the foil faced foam board and the aluminum tape. Burnishing is key to making sure that the bond is good.

Burnishing is the treatment in which the surface of the tape is polished, after it has been applied, using a hard smooth surface such as a wooden, metal or plastic spatula or spoon. Even a fingernail may suffice to ensure a good bond.

One way to know that a good bond has been achieved after burnishing is when the edge of the aluminum tape seems to 'disappear' into the surrounding surface.

Step 11

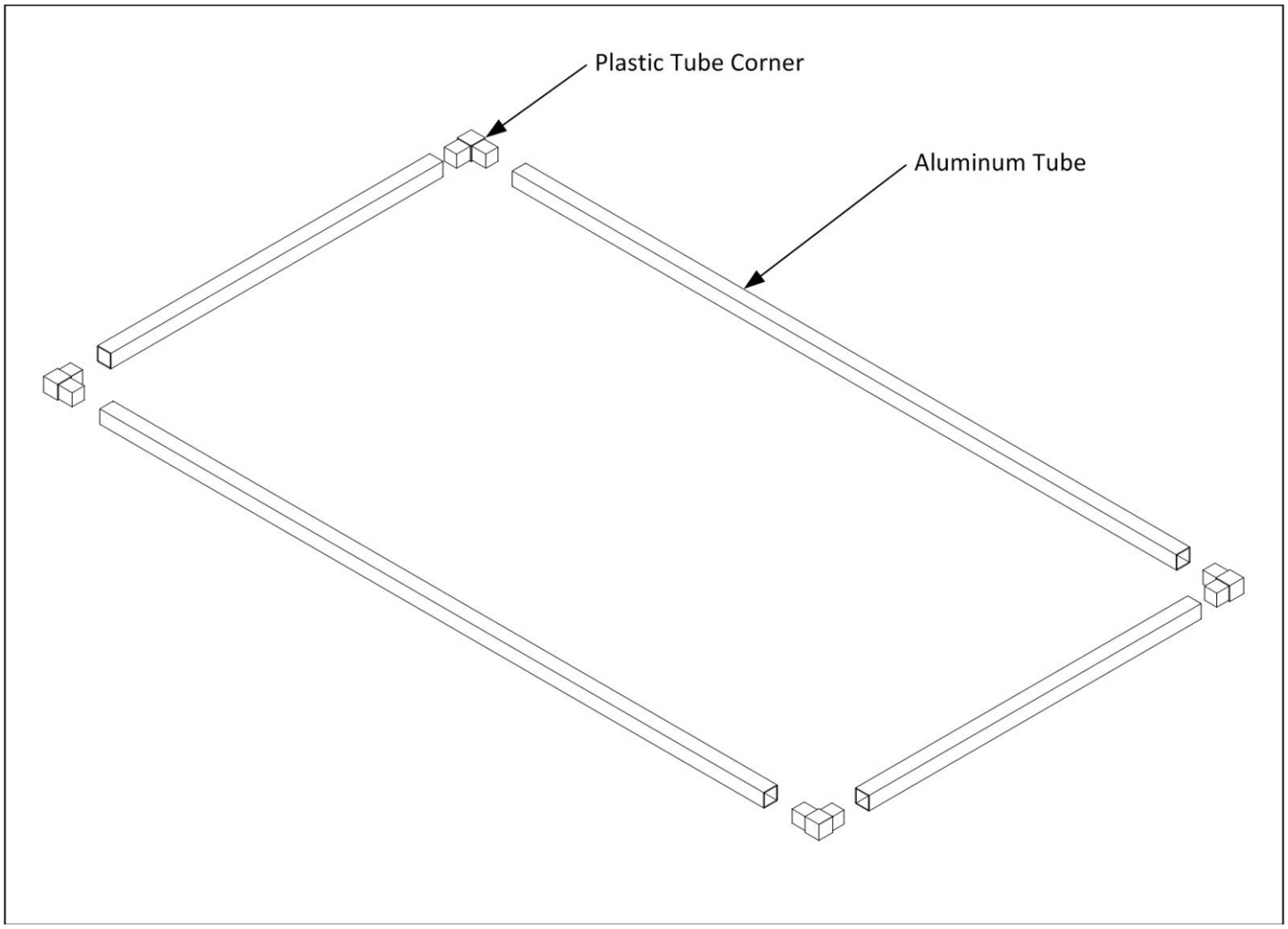


Figure 33

Required Parts:

(2) Aluminum Tube x 24”
(2) Aluminum Tube x 48”
(4) Plastic Tube Corner

Assemble the cover frame as shown. Lightly tap the plastic tube corners with a hammer if necessary to make them fit snuggly.

Step 12

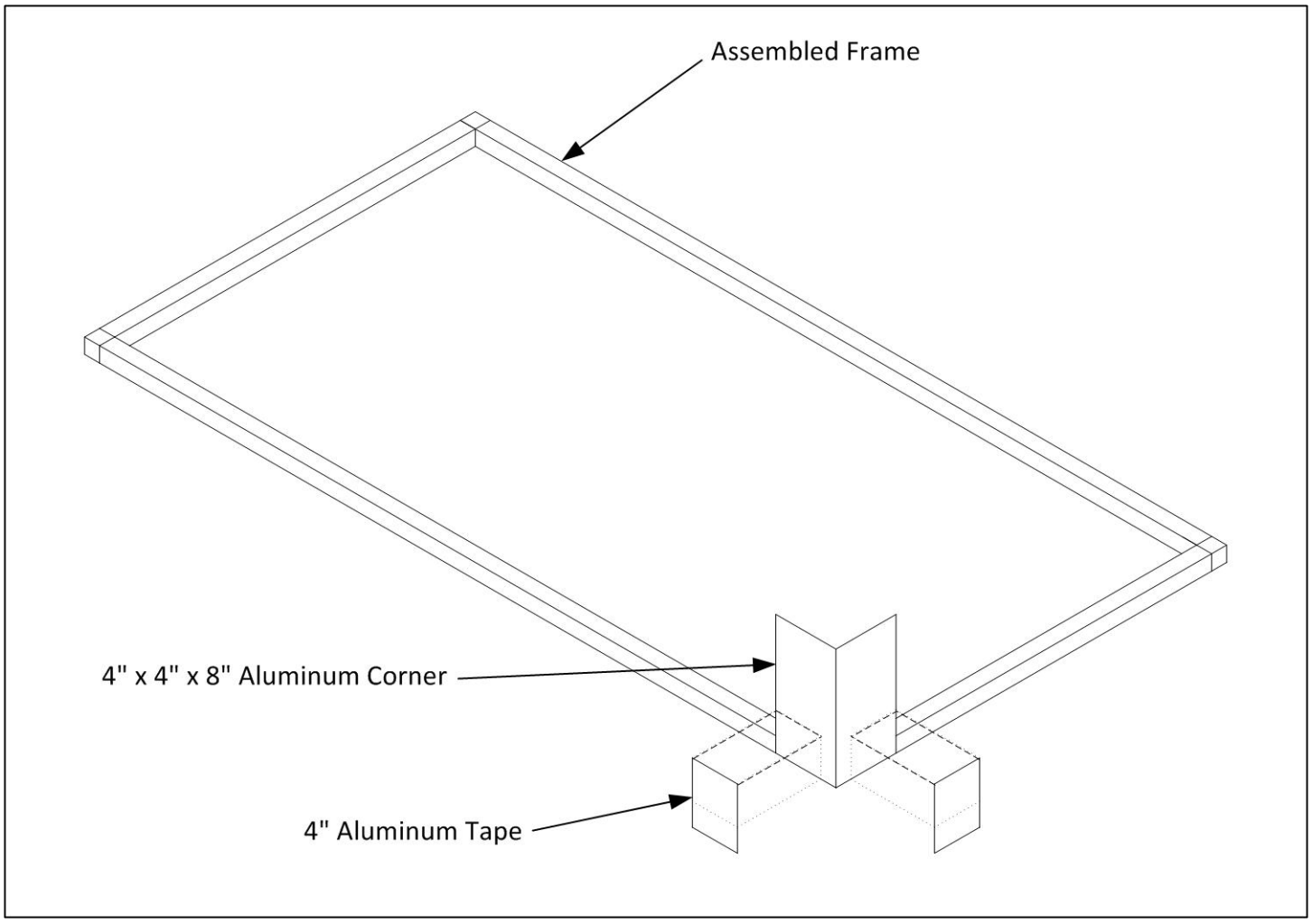


Figure 34

Required Parts:

(4) Sheet Aluminum Corner – 4” x 4” x 8”

Using 4” strips of aluminum tape, afix each aluminum corner to the cover frame. Wrap the aluminum tape strips around the tubing.

Step 12 (continued)

Figure 35

Base Frame with Sheet Aluminum Corners.

Step 13

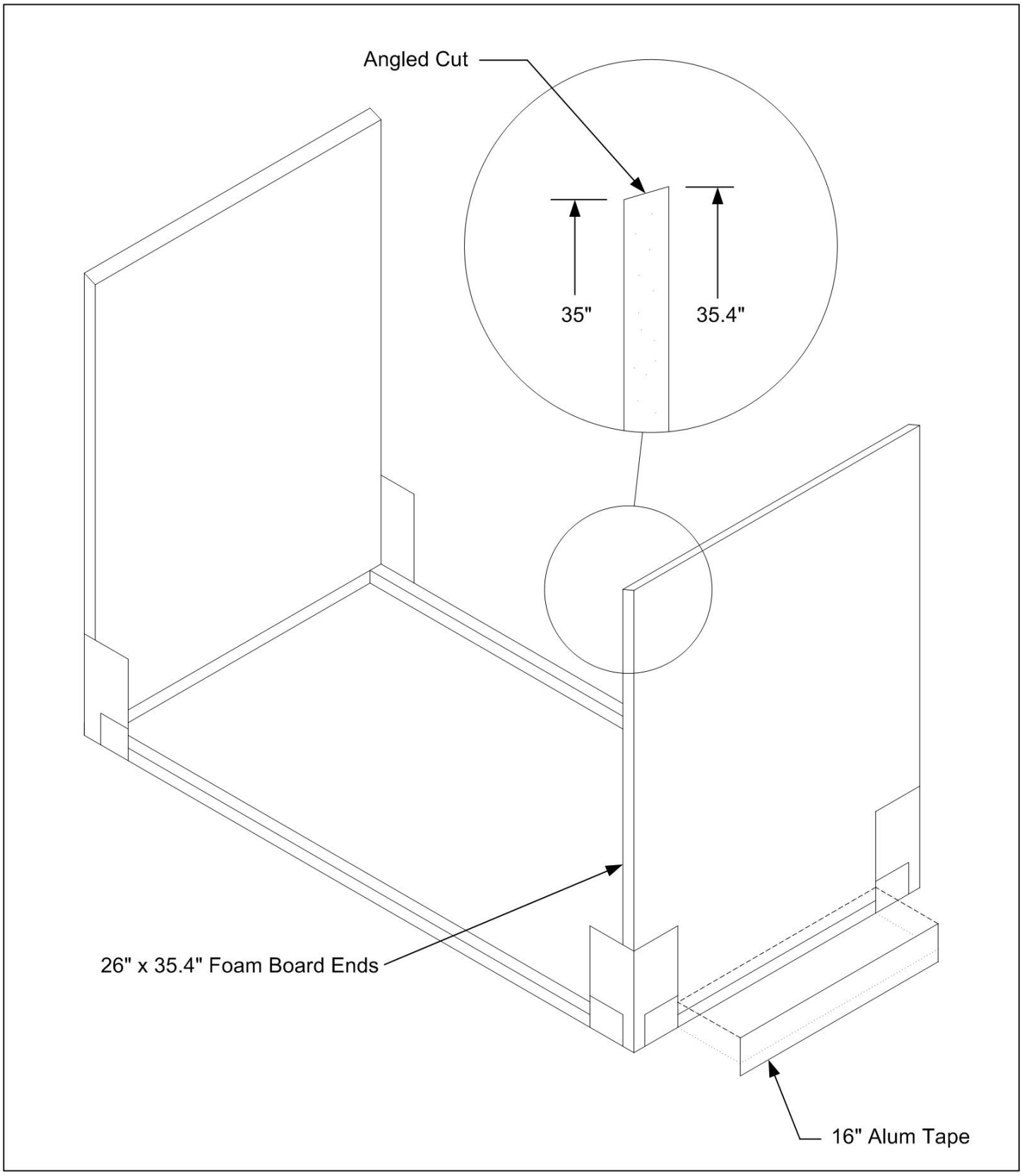


Figure 36

Step 13 (continued)

Required Parts:

(2) Pre-Cut Foil-Faced Foam Board – 26” x 35.4”

The foam end pieces should already be cut to size. The top profile of the end pieces need to be cut on an angle. Use a knife with a long, disposible blade to cut the profile. If the profile cut isn’t perfect, consider that the seam where the foam panels meet will later be covered with an aluminum corner piece and therefore doesn’t need to be 100% perfect.

Using 16” strips of aluminum tape, afix each pre-cut foam end piece to the cover frame. Wrap the aluminum tape strips around the tubing.

Step 14

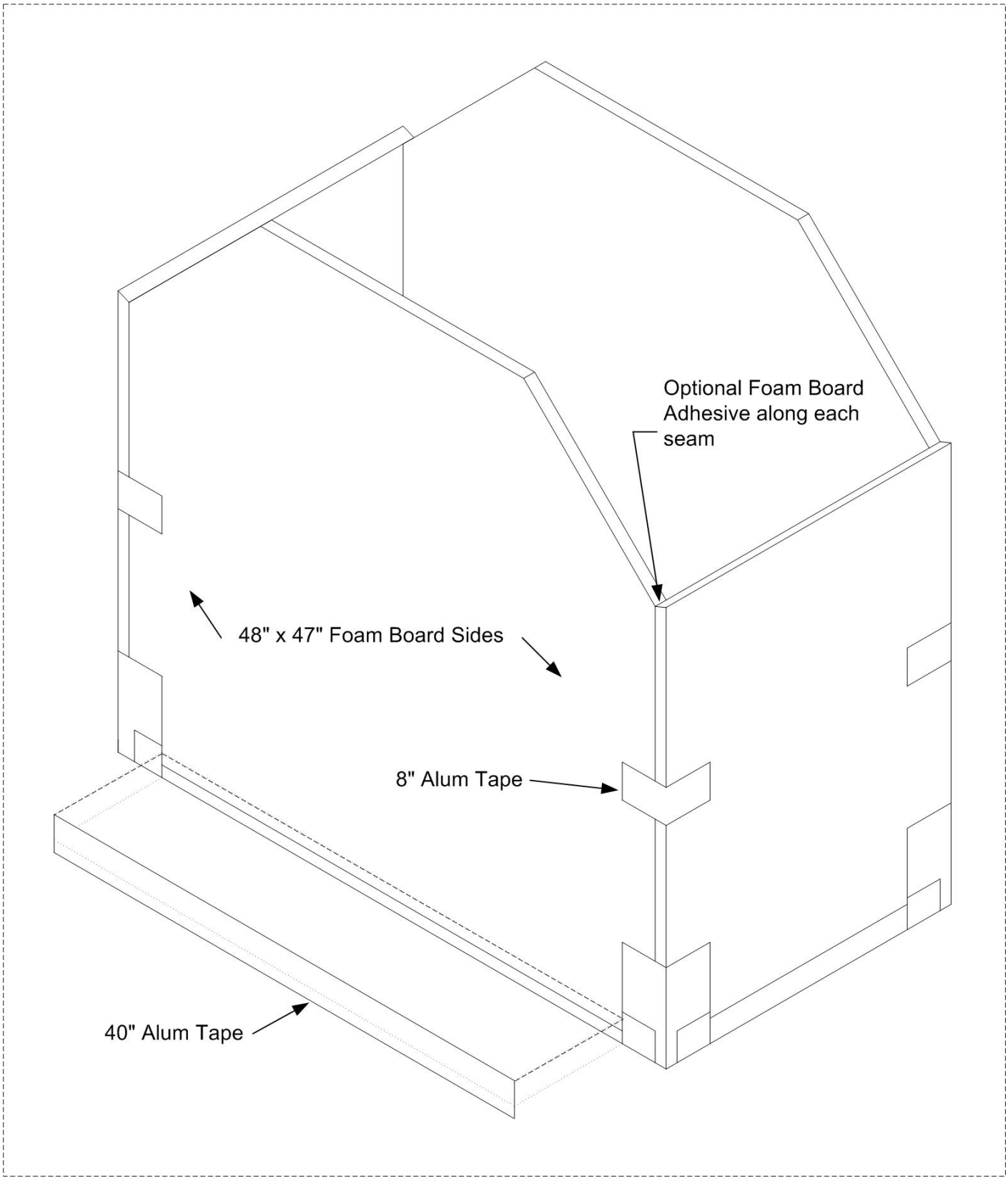


Figure 37

Step 14 (continued)

Required Parts:

(2) Pre-Cut Foil-Faced Foam Board – 48” x 47”

The foam side pieces should already be cut to size.

Using 40” strips of aluminum tape, afix each pre-cut foam side piece to the cover frame. Wrap the aluminum tape strips around the tubing.

Use 8” strips of aluminum tape to hold the side pieces to the end pieces.

Figure 38

Step 15

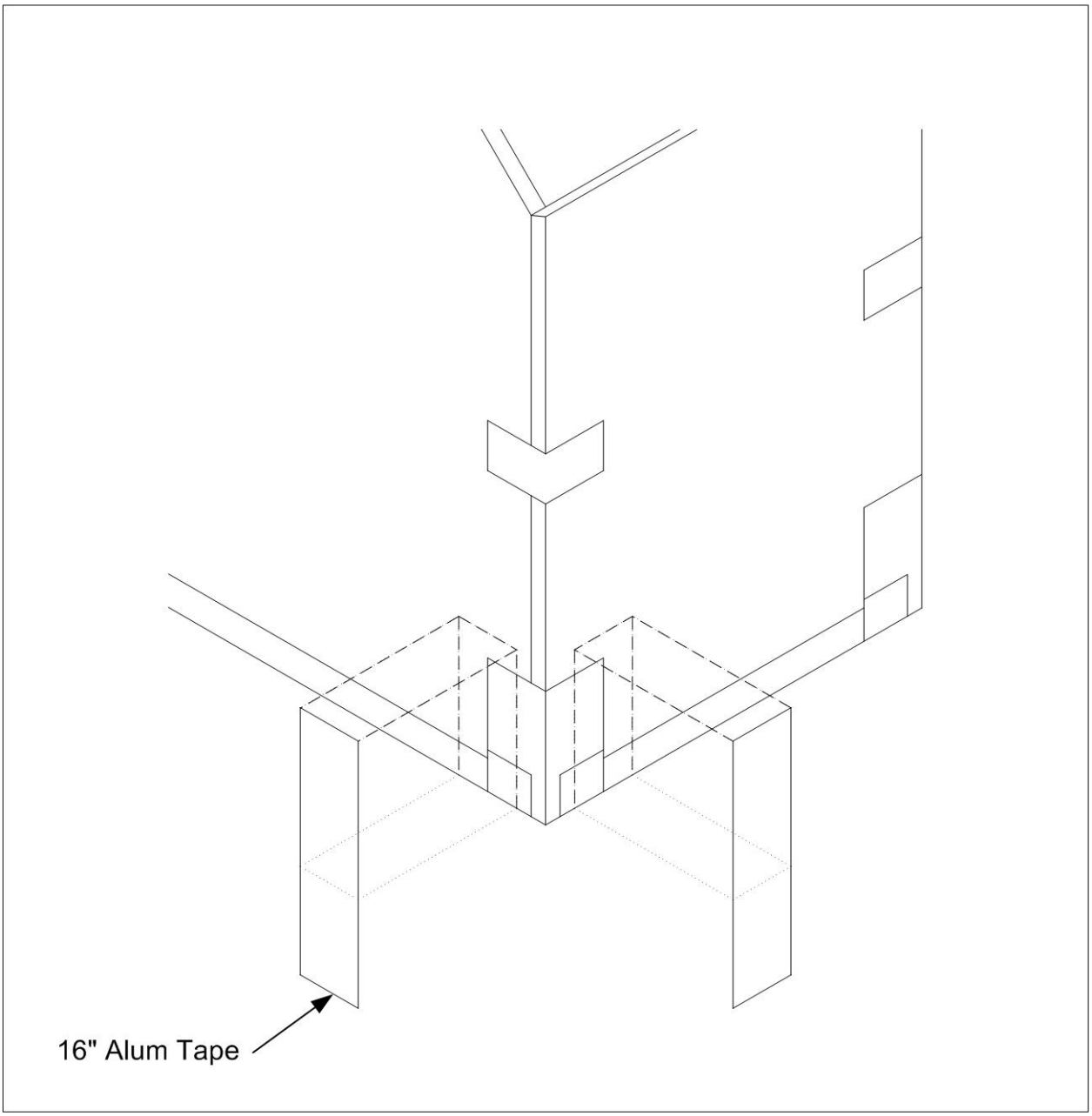


Figure 39

Using 16” strips of aluminum tape, reinforce each corner of the cover frame. Wrap the aluminum tape strips around the tubing and up the inside.

Step 16

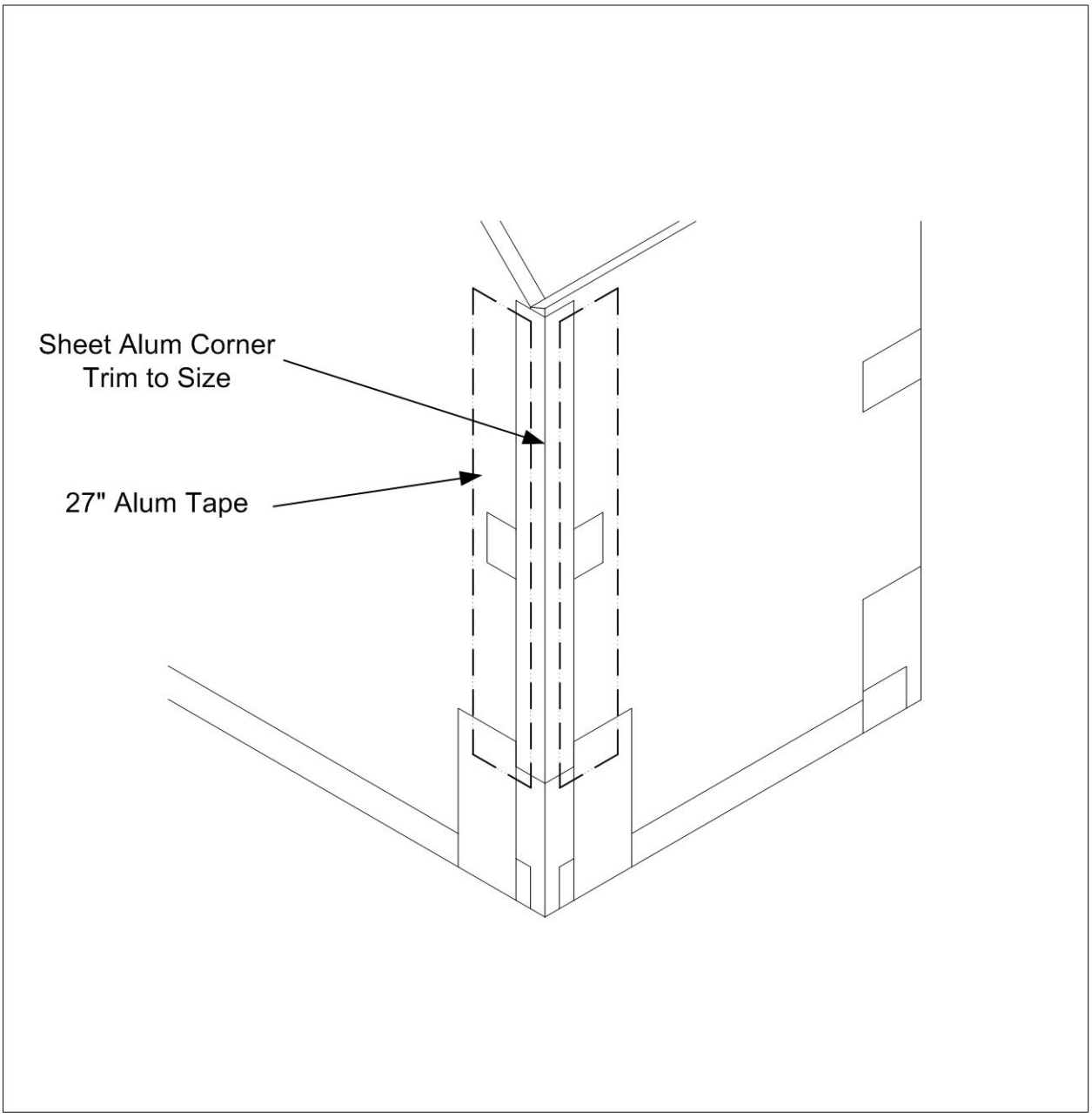


Figure 40

Required Parts:

(4) Sheet Aluminum Corner

Trim sheet aluminum corners to fit, approx. 28" in length.

Using 27” strips of aluminum tape mount sheet aluminum to each corner.

Step 17

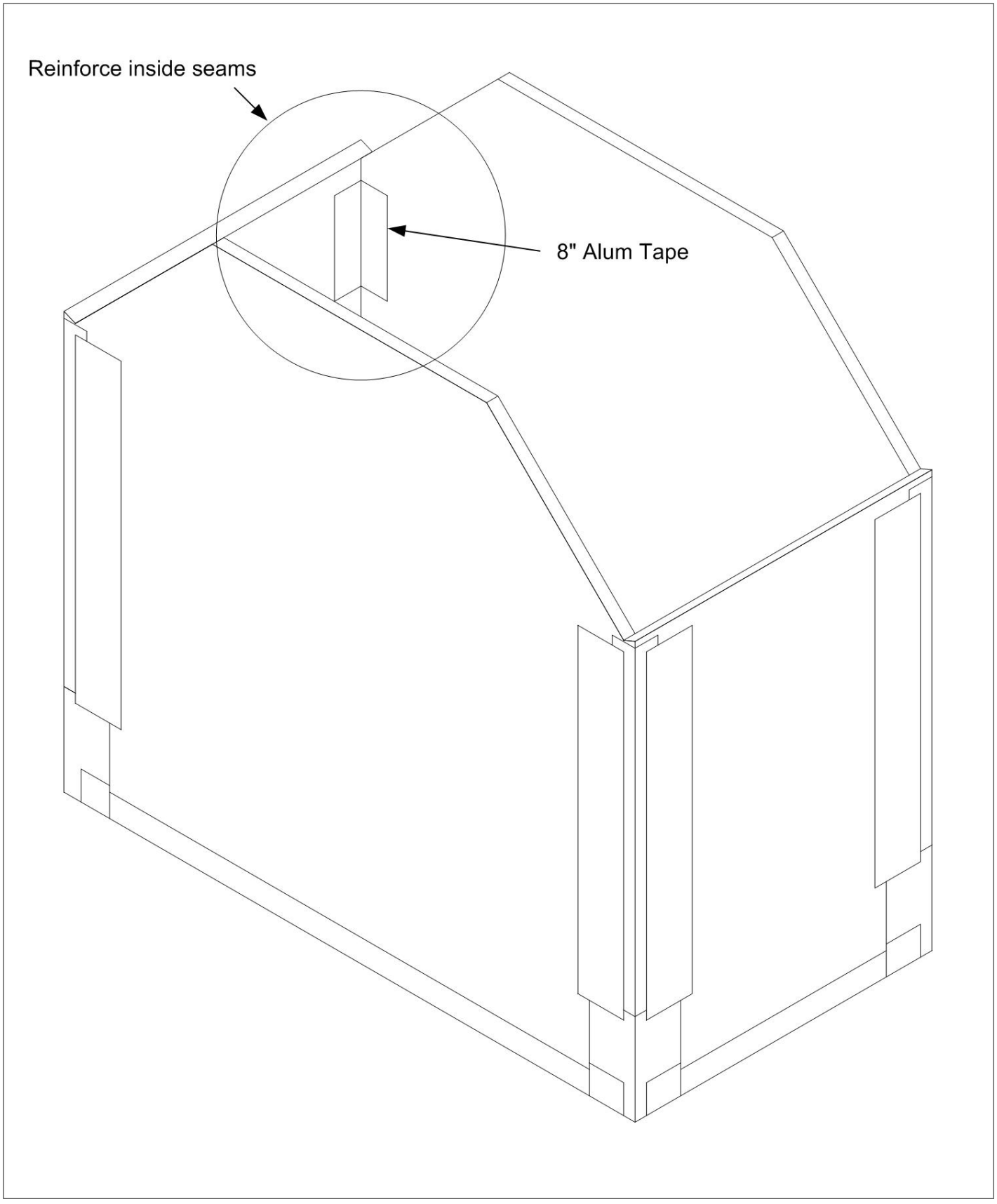


Figure 41

Step 17 (continued)

Using 8” strips of aluminum tape, reinforce the top inside seams.

The most effective way of applying tape to an inside corner is to fold the tape in half before removing the paper backing.

Step 18

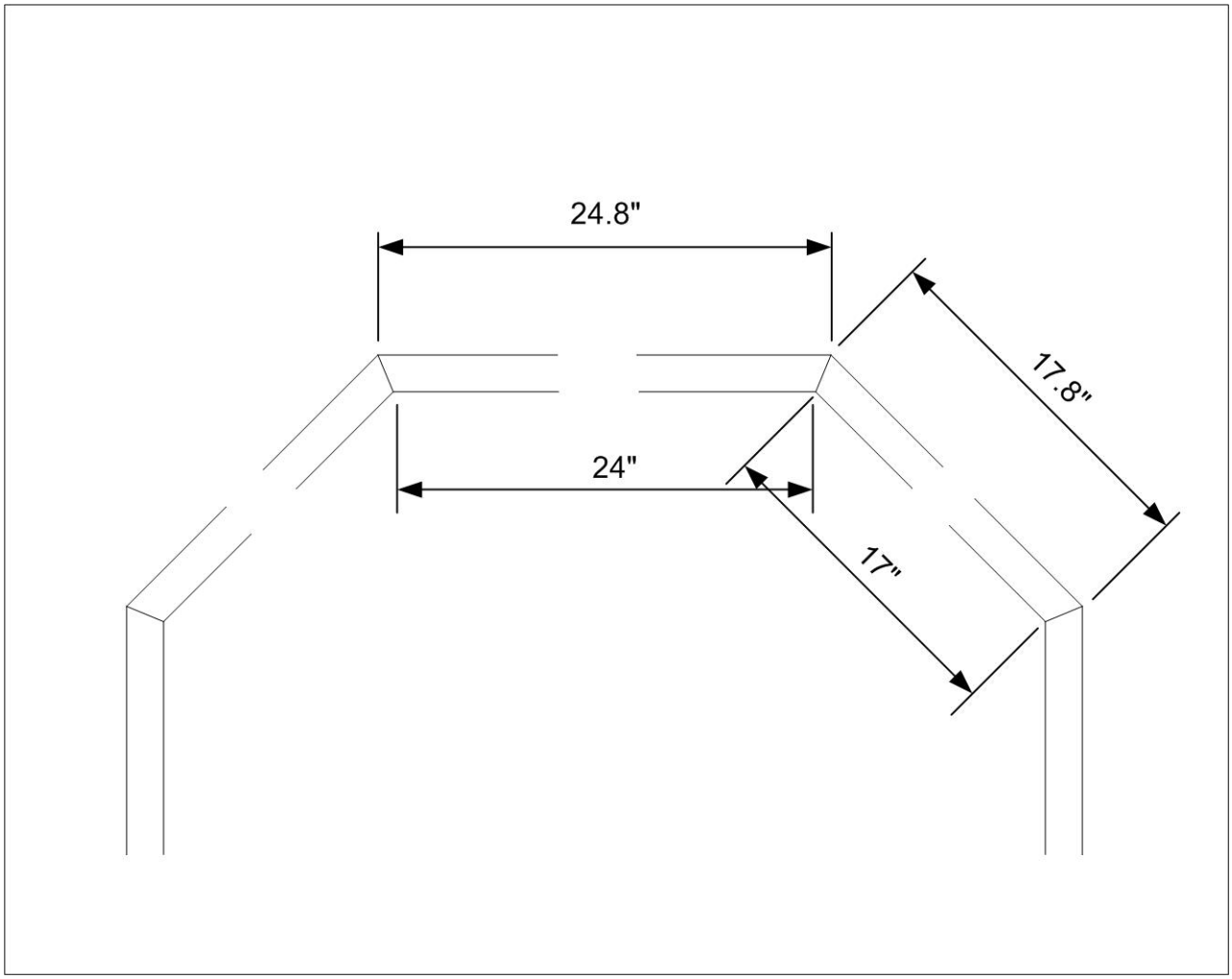


Figure 42

Required Parts:

(2) Pre-Cut Foil-Faced Foam Board – 26” x 17.8”
(1) Pre-Cut Foil-Faced Foam Board – 26” x 24.8”

The foam top pieces should already be cut to size. The end profiles of each of the pieces need to be cut on an angle. Use a knife with a long, disposible blade to cut the profile. If the profile cut isn’t perfect, consider that the seam where the foam panels meet will later be covered with an aluminum corner piece and therefore doesn’t need to be 100% perfect.

Trim and test fit the top panels to ensure a proper fit. Using 8” strips of aluminum tape, afix each pre-cut foam top piece to the cover frame.

Before taping the final panel in place, apply 8" strips of aluminum tape to the inside seams of the other top panels. Refer to figures 43 & 44.

Step 18 (continued)

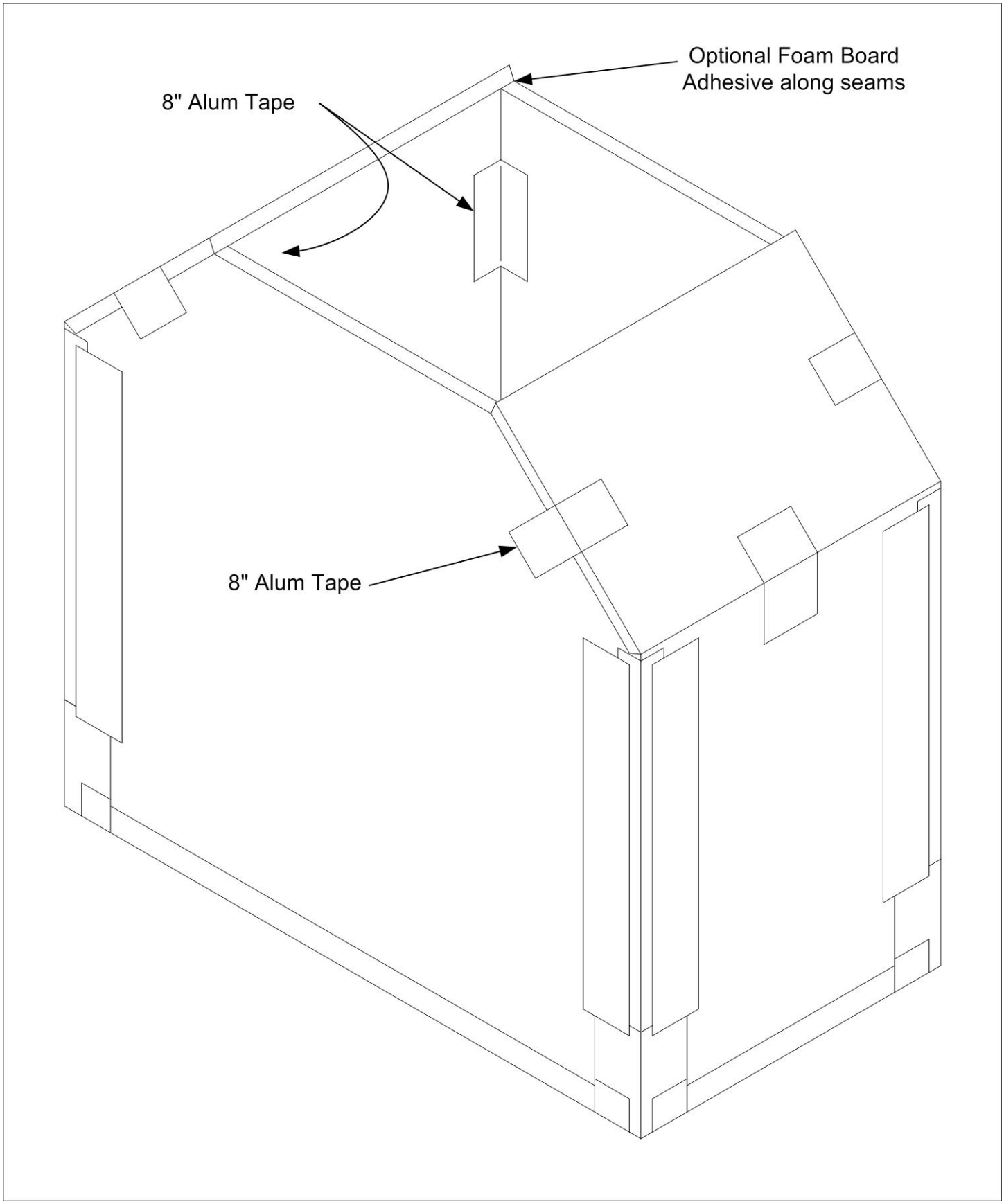


Figure 43

Step 18 (continued)

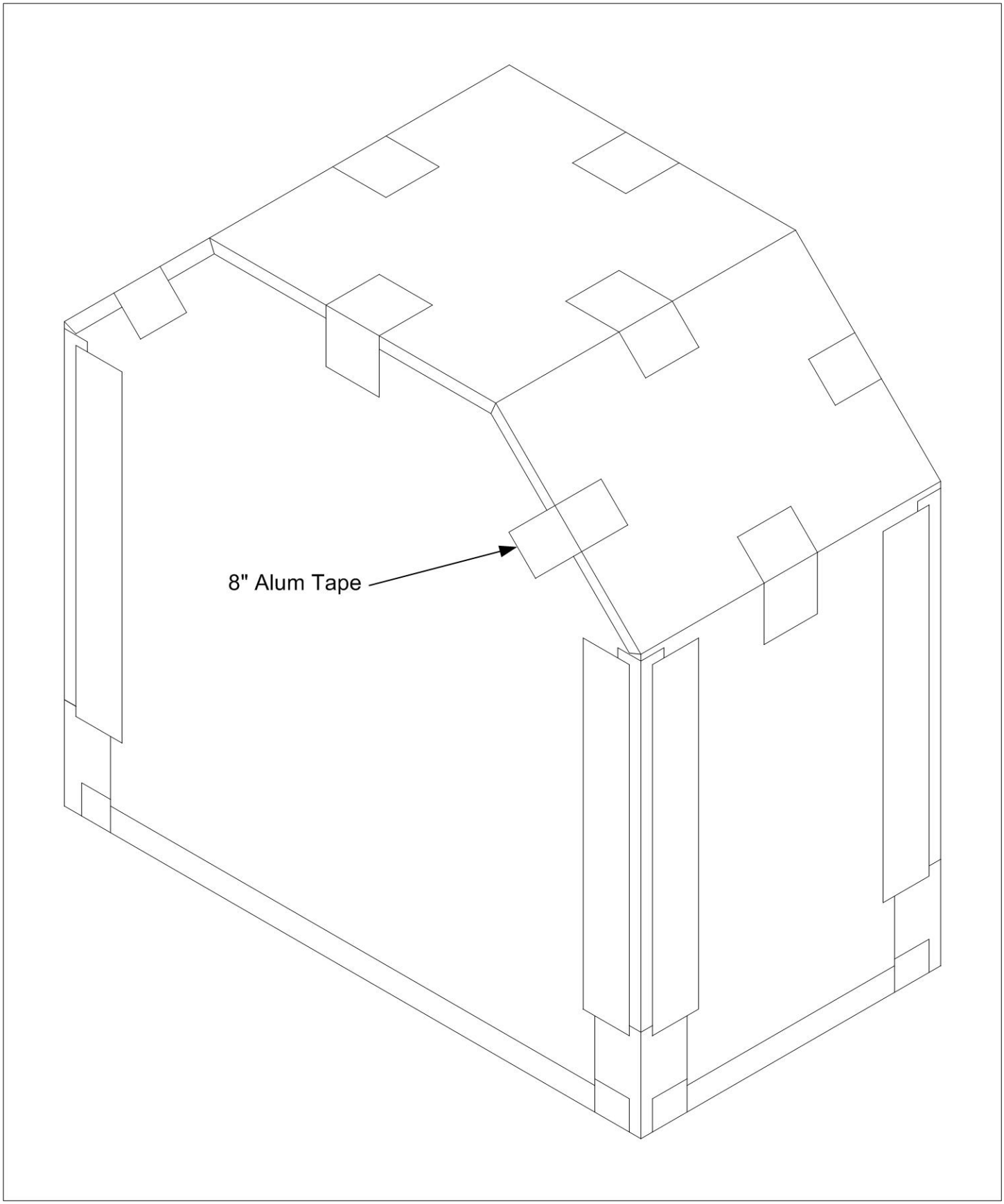


Figure 44

Step 19

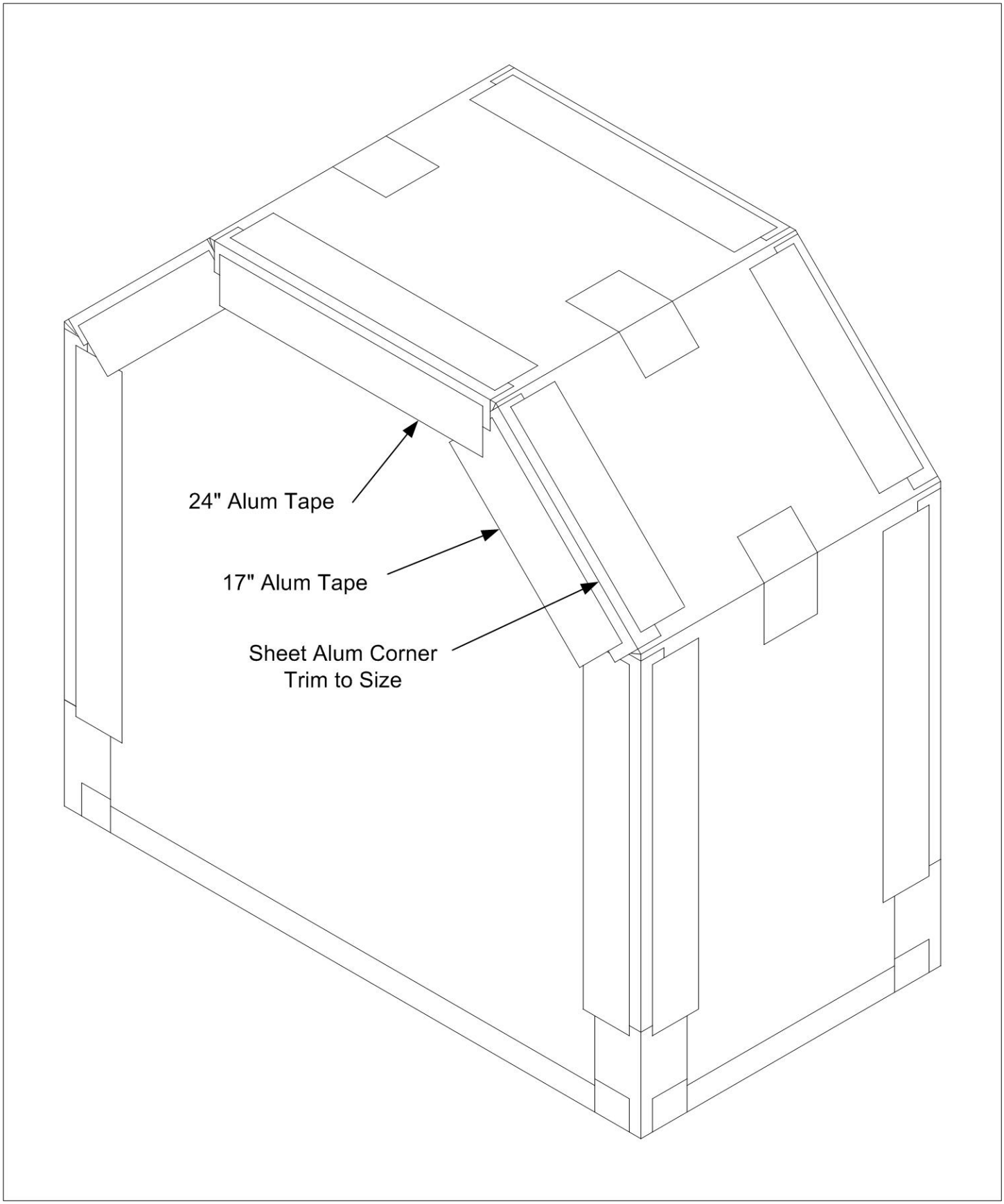


Figure 45

Step 19 (continued)

Required Parts:

(4) Sheet Aluminum Corner x 17.5"
(2) Sheet Aluminum Corner x 24.5"

Trim sheet aluminum corners to fit.

Using 17” strips of aluminum tape mount (4) sheet aluminum to edges.

Using 24” strips of aluminum tape mount (2) sheet aluminum to edges.

The sheet aluminum edges and tape may overlap previous applications.

Step 20

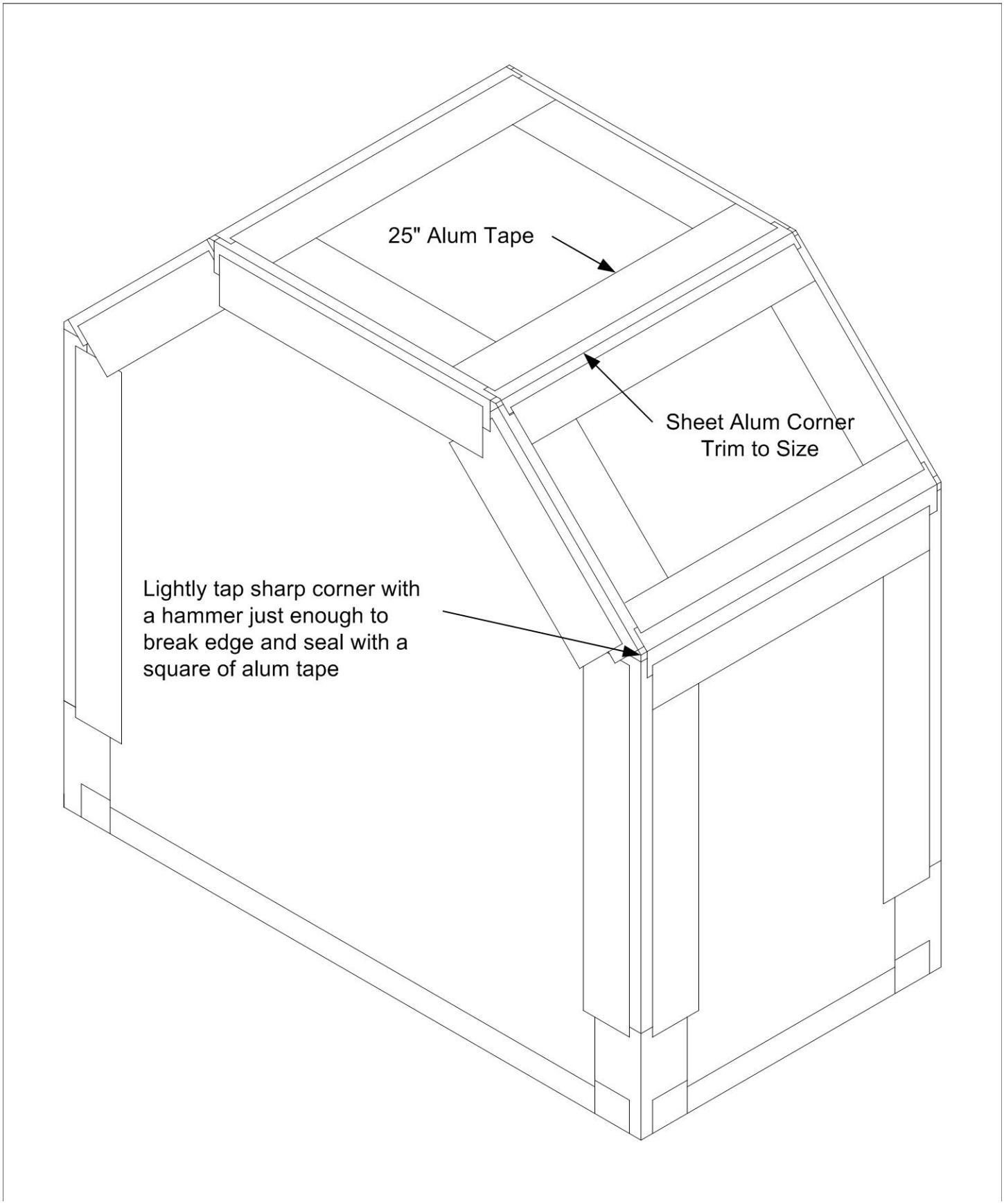


Figure 46

Step 20 (continued)

Required Parts:

(4) Sheet Aluminum Corner x 25.5"

Trim sheet aluminum corners to fit.

Using 25.5” strips of aluminum tape mount (4) sheet aluminum to edges.

The sheet aluminum edges and tape may overlap previous applications.

Lightly tap sharp corners with a hammer just enough to break edge and seal with a square of alum tape. See Figure 46.

Turn the cover over and apply aluminum tape to the inside perimeter of the base (2 pieces 42" long and 2 pieces 16" long). Apply an 8" strip of aluminum tape to the inside of each corner.

Note:

At this point, the cover is essentially finished. If you have achieved a good bond with the aluminum tape you may continue to the finishing steps. If you would like to reinforce the whole cover and improve the bonding of the aluminum tape you may add another layer of tape to every edge. If you do so, stagger the tape outward by 1/2".

See Figure 47.

Step 20 (continued)

Figure 47

Hardware and Deck Installation

Step 21

Required Parts:

(1) Sheet Aluminum Flashing Shingle 5" x 7"
(3) Handles - Rolled Steel
(4) Sheet Metal Screws - #12
(2) Machine Screws - #10 x 1-1/4
(2) Washers - #10
(2) KL Lock Nuts - #10

At this point the deck frame should easily slide back and forth on the base assembly. The cover should be placed on the deck frame and the best position chosen to accomodate the telescope. If necessary, the pier plate(s) and telescope should be mounted on the pier to help choose the best position. Tighten the (12) cap screws holding the deck frame permanently in place.

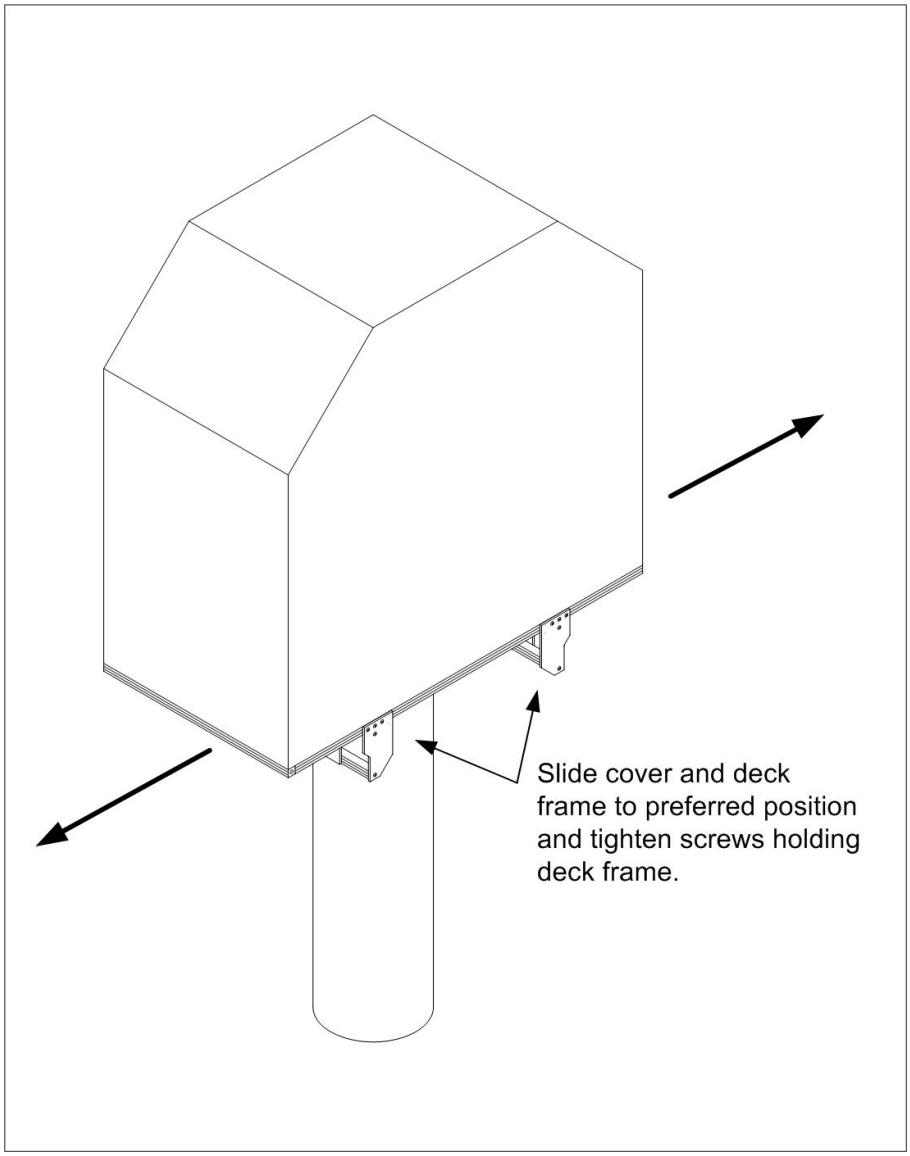


Figure 48

Step 21 (continued)

Install the 3 handles. The two lower handles attach to the aluminum tube framing the bottom of the cover. The 3rd handle attaches to the side of the cover at an upper mid position. The exact positions should be determined by your reach. Standing at the corner of the cover, extend your hands to a comfortable reach. See Figure 48. This is how the cover will be removed during operation. If you prefer to remove the cover using two people, there will be handles installed on each side of the lower cover frame.

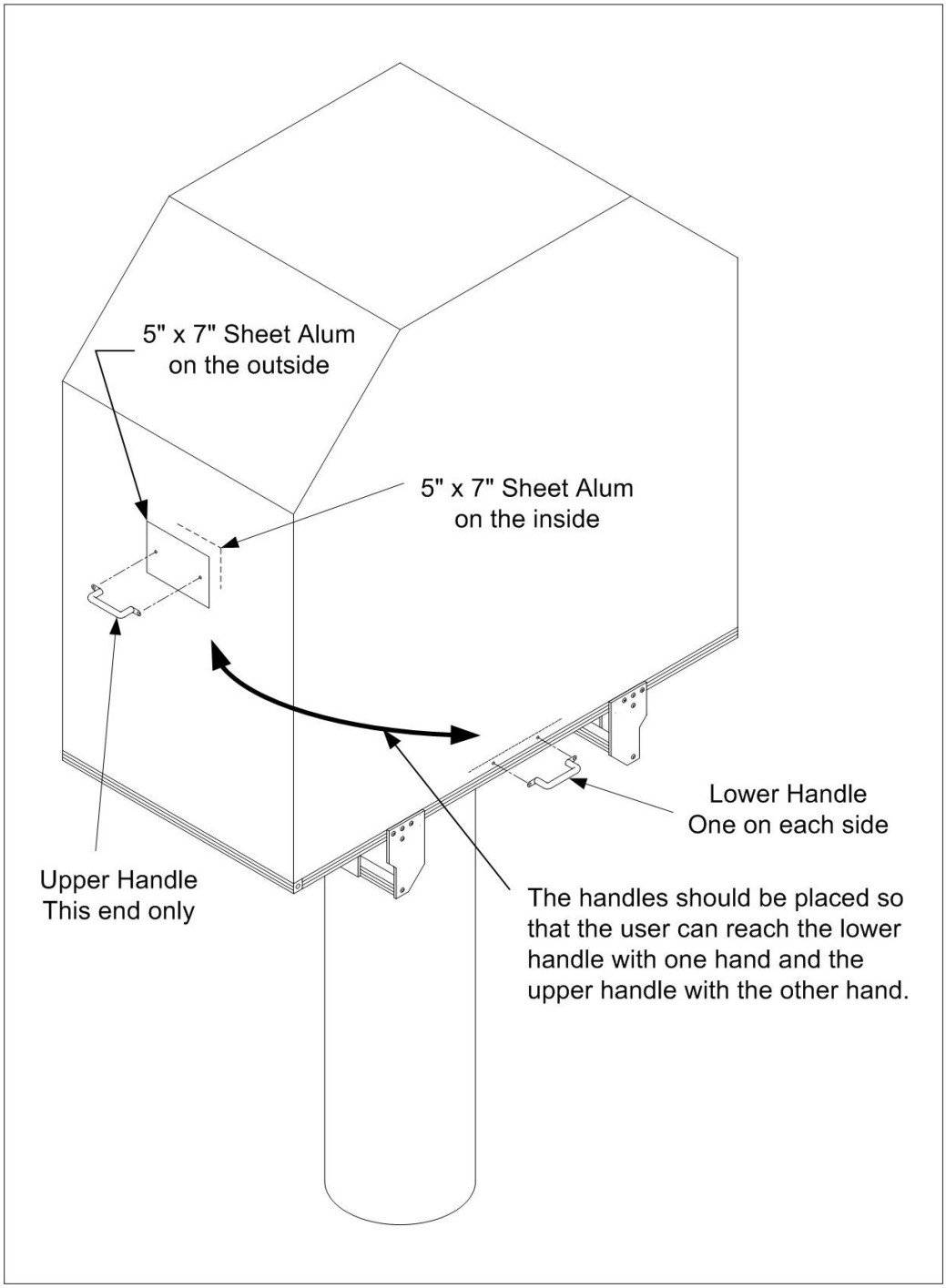


Figure 49

Step 21 (continued)

Install the 3 handles. The two lower handles attach to the aluminum tube framing the bottom of the cover. The 3rd handle attaches to the side of the cover at an upper mid position. The exact positions should be determined by your reach. Standing at the corner of the cover, extend your hands to a comfortable reach. See Figure 48. This is how the cover will be removed during operation. If you prefer to remove the cover using two people, there will be handles installed on each side of the lower cover frame.

Tape a 5" x 7" sheet aluminum shingle to the cover at the location of the upper handle. See Figure 49. Use aluminum tape around the perimeter of the shingle. Use the #10 machine screws to poke holes through the foam cover and tape the other 5" x 7" aluminum shingle to the inside of the cover aligning the screw holes. Use the #10 x 1-1/4" machine screws to attach the handle. Washers are used on the outside of the cover and locking nuts on the inside. Tighten enough to hold the handle securely but don't deform the aluminum shingles or cover more than necessary.

Attach the 2 lower handles using #12 sheet metal screws. Pilot drill holes using 5/32" drill. See Figure 50.

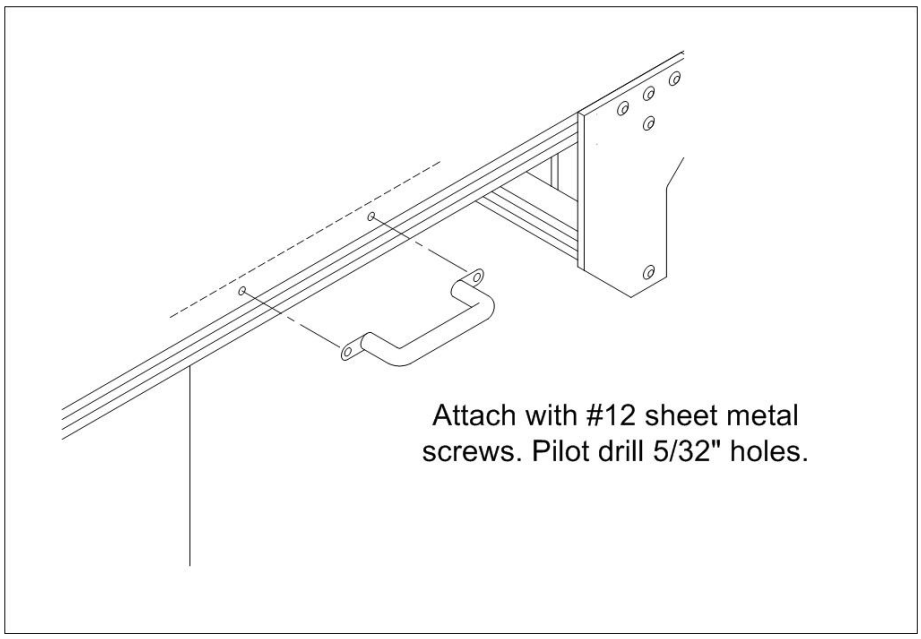


Figure 50

Step 22

Required Parts:

(4) Latch Assembly & Striker
(8) Machine Screw, #6 x 1/4
(8) Sheet Metal Screw - #6 x 1/2
(1) Neoprene Foam - 3/16 x 4' (This foam is the thinner of the two types included)

Mount each latch to a connector plate C using (2) #6 x 1/4" machine screws. See Figure 51.

The Neoprene Foam should be cut into (4) equal lengths. DO NOT REMOVE THE PAPER BACKING. Each piece of foam, including the paper backing should be used as a temporary spacer to set the correct height of the cover frame for installing the striker. See Figure 52.

Hold the striker at the closed position and mark the location for drilling holes.

Pilot drill 7/64" holes at the marked locations.

Install the strikers using #6 x 1/2" sheet metal screws.

Remove and discard the 3/16" neoprene foam spacers.

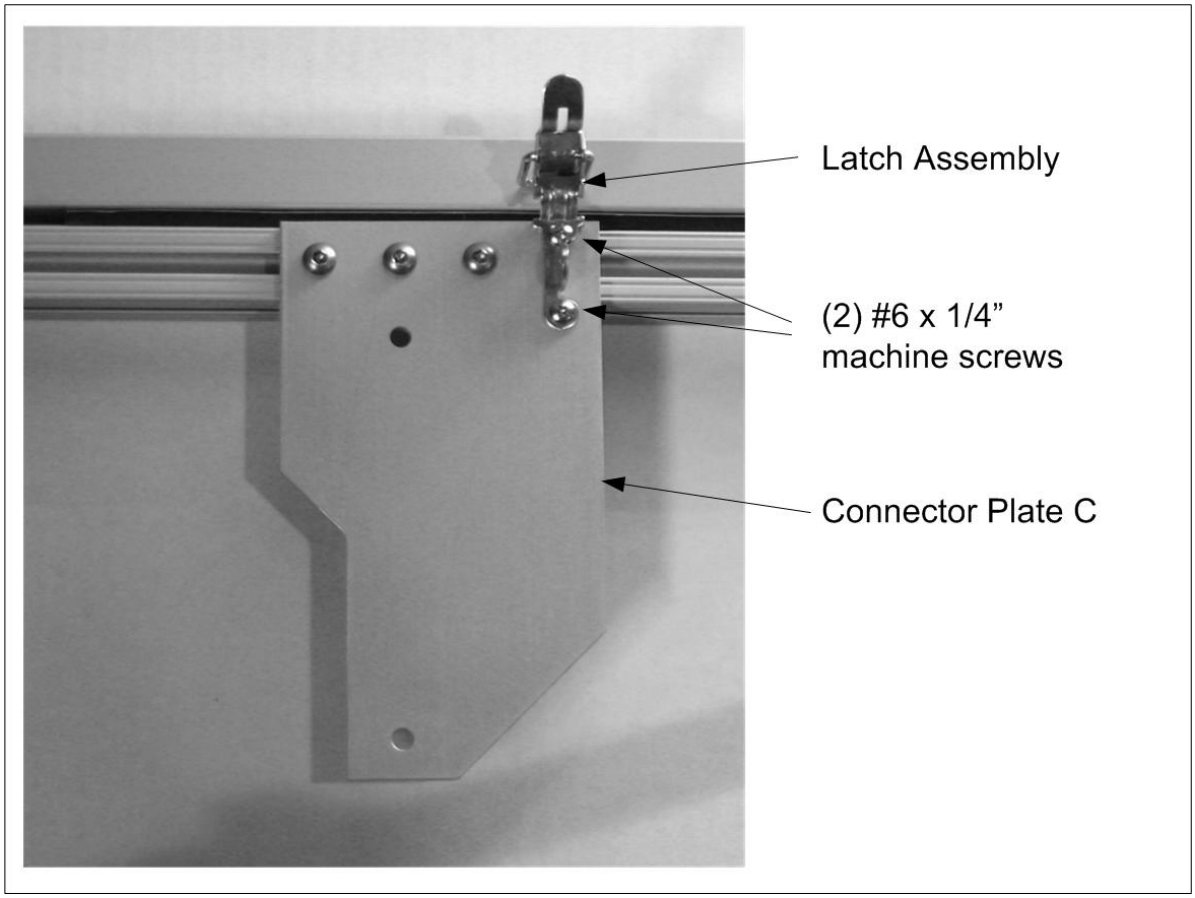


Figure 51

Step 22 (continued)

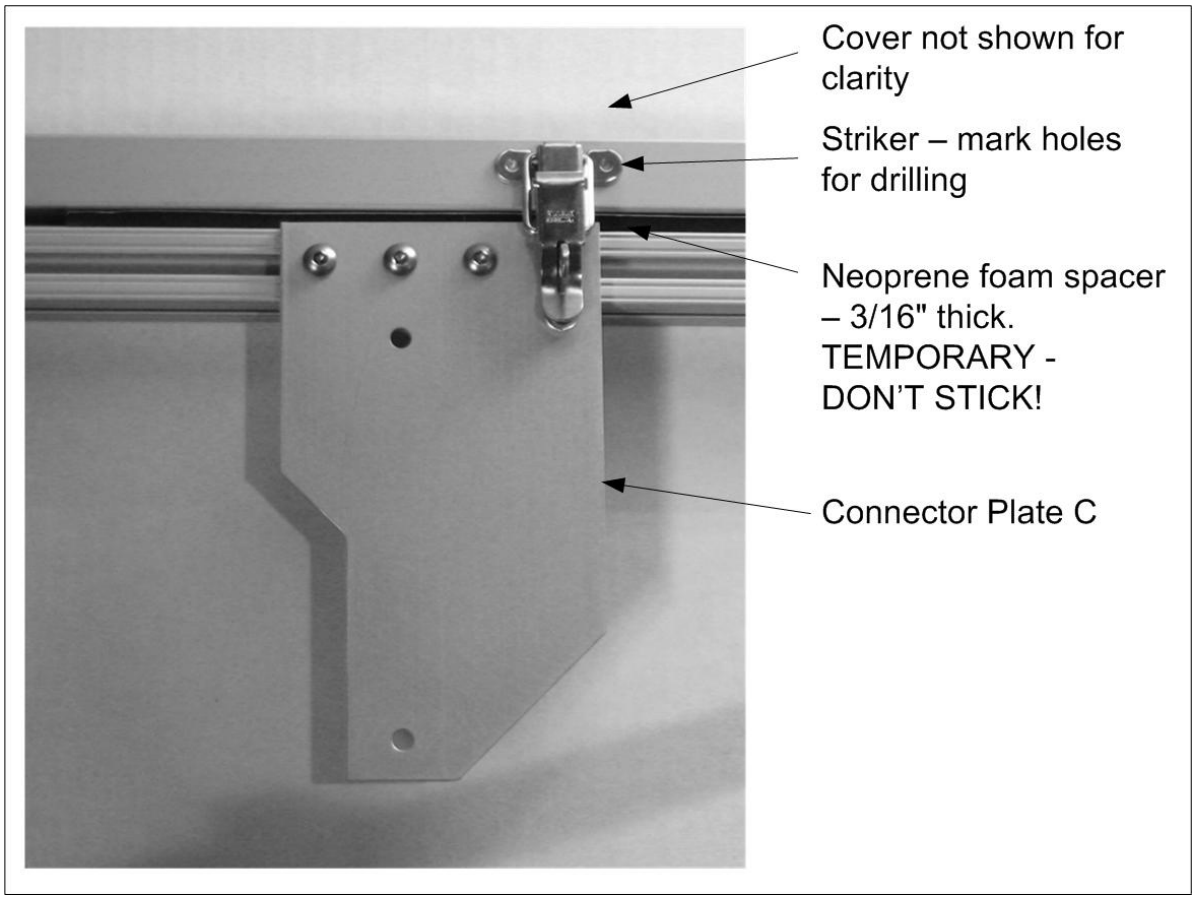


Figure 52

NOTE:

If the latches stick during operation, it may be necessary to file the padlock ring at the point of contact to ensure smooth operation.

Step 23

Required Parts:

(4) Threaded Stud - 1/4-20 x 2
(4) Nut - 1/4-20
(8) Washer - 1/4-20
(1) Neoprene Foam - 1/4 x 16'
(1) Foil Faced Foam Board - 2' x 4' (thickness as req'd - up to 1" thick) - optional
(1) Plywood with fine finish on one face - 2' x 4' (thickness as req'd)

Any combination of foam board and plywood can be used to build the deck. The preferred method is to use 1/2" foil faced foam board and 1/2" A-C plywood, making a deck that is 1" thick. Plywood alone is also acceptable. The idea is to create an insulated deck with a plywood surface for mounting equipment. You should also consider the amount of available space underneath the mounted pier plate to insure there is enough room to use tools etc. to mount your telescope.

Install the threaded studs into the t-slot nuts previously placed in the t-slot cross bars. These will be used to hold down the plywood deck in later steps.

Install the foam board by cutting to size and notching as required. Cut holes for the anchor bolts using a hole saw if available. Press into place. See Figure 52.

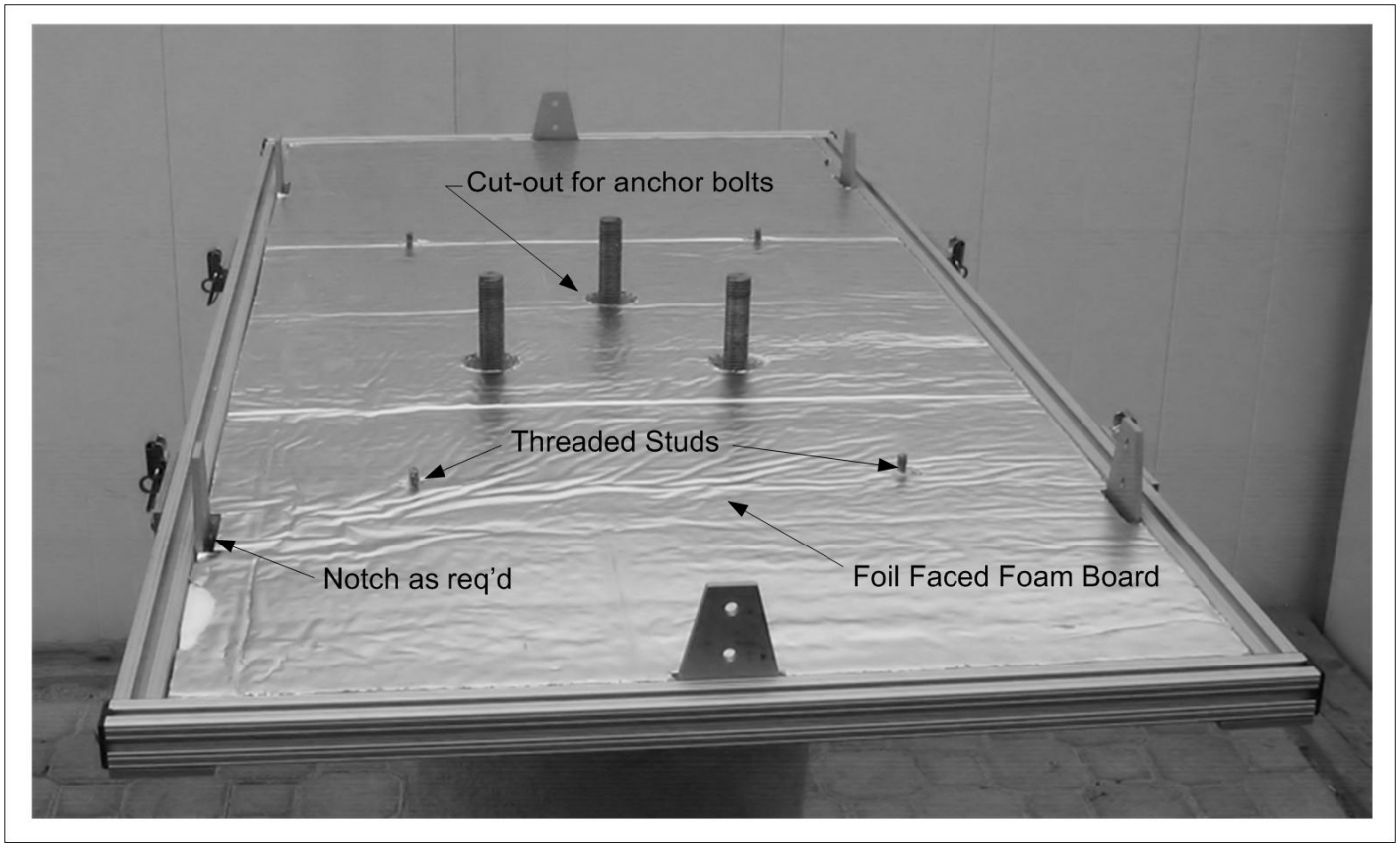


Figure 53

Step 23 (continued)

Use aluminum tape to seal the perimeter around the foam board. Use tape above and below the deck. This will greatly the dust and bugs that might get into the enclosure.

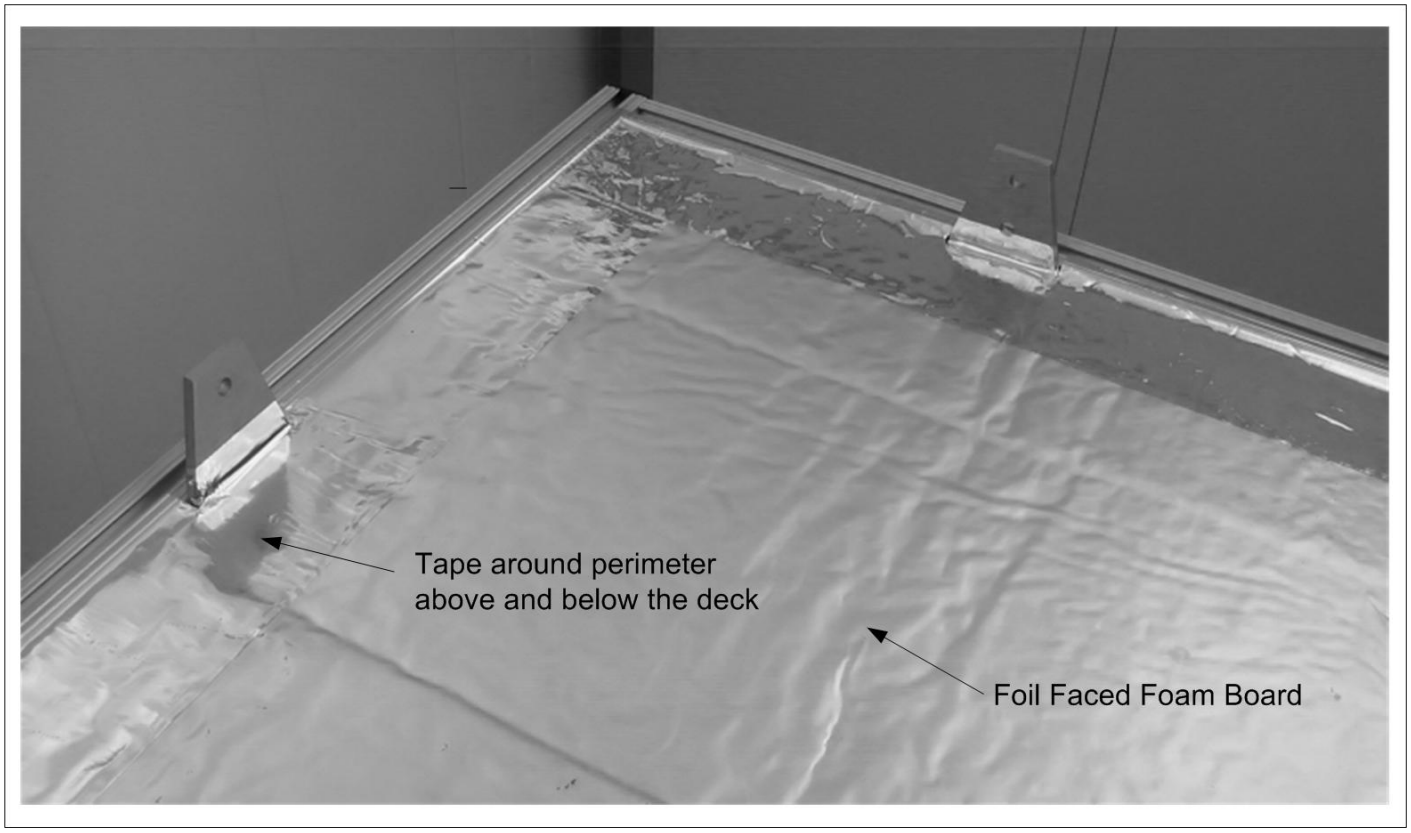


Figure 54

Step 23 (continued)

Install the plywood by cutting to size. If the plywood deck is installed over foam board, it may be cut to fit inside the perimeter without notching. Cut holes for the anchor bolts with a hole saw if available. Drill 1/4" holes for the 4 threaded studs.

Fasten the deck in place by installing washers and nuts on the threaded studs and tightening.

Install the 1/4" thick neoprene foam weather seal around the perimeter. Cut to required lengths. Install directly over the t-slot bars. Do not stretch the neoprene foam and butt the edges tightly against each other.

Note: If the cover is to be painted or covered with painted Dacron, rubbing vasoline or paste wax into the neoprene foam will keep it from sticking to the cover after it's been painted.

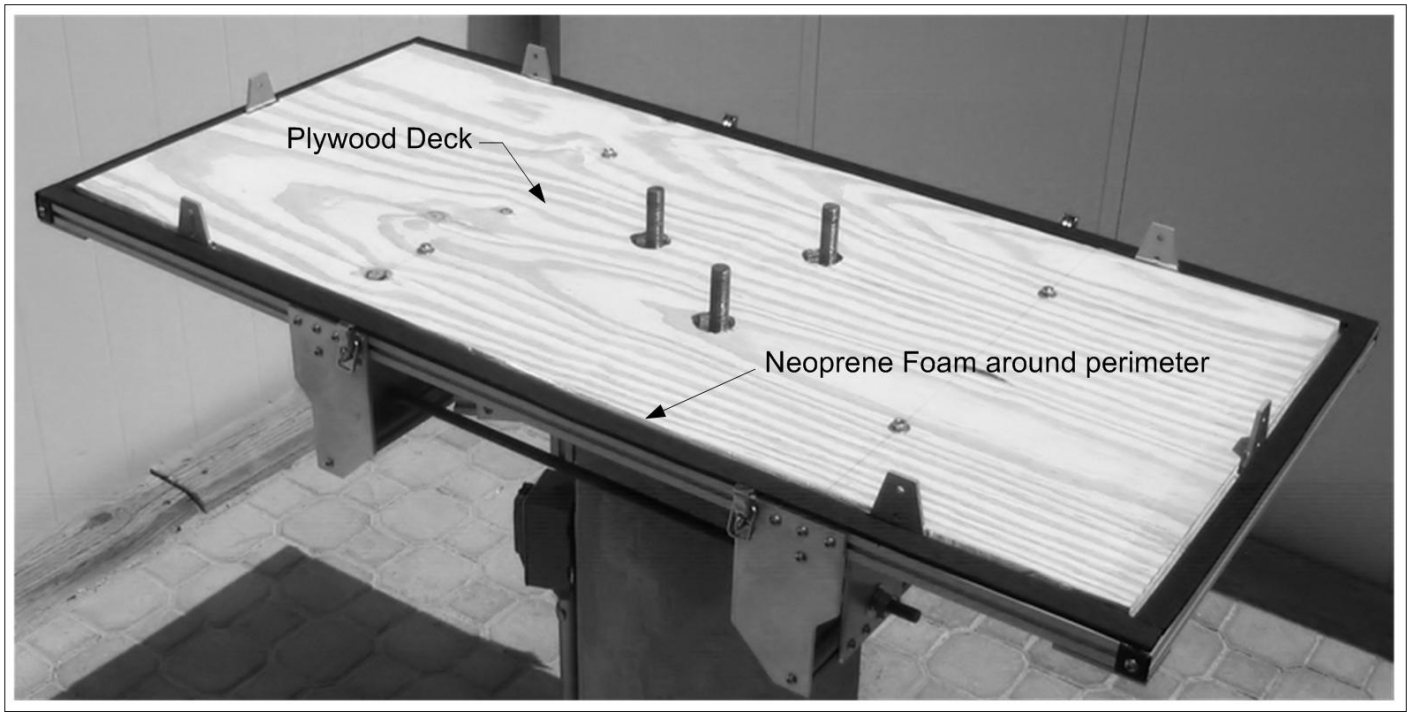


Figure 55

Cover Finishing Options

Painting

Required Parts:

- Flat Aluminum Primer (eg. Rust-Oleum Brand)
- Protective Enamel Spray (eg. Rust-Oleum Brand)

Although the finished Motel o'Scope cover will last for up to several years outdoors in its unprotected state, leaving it unpainted or unfinished will quickly exceed the warranty of the foil faced foam board.

Applying a protective enamel coating will extend the longevity of the cover greatly. Since the surfaces of the cover are essentially aluminum, the paint job should be treated as though it were applied to a metallic surface.

Remove the latches, strikers and handles.

Wash and dry the cover surfaces.

Prime the cover with a metallic or aluminum surface primer. Follow the manufacturer's directions.

Paint the cover using a protective enamel spray. Follow the manufacturer's directions. Using a light color such as white or a reflective metallic color will greatly reduce the amount of heat build-up that can occur inside the enclosure.

Replace the latches, strikers and handles.

The neoprene foam weather stripping has a tendency to stick to newly painted surfaces in warm temperatures. Rub vasoline or paste wax onto the neoprene foam to prevent this from happening.

Dacron Covering

Required Parts:

(1) Dacron Envelope or 6 yds x 64" x 2.7oz Dacron Fabric (eg. Aircraft Spruce & Supply)
(50) ft Dacron Seam Tape x 3" with pinked edges (eg. Aircraft Spruce & Supply)
(1) pint latex/neoprene contact adhesive (eg. DAP Weldwood Nonflammable Contact Cement)
(1) quart latex-based fabric filler/primer (eg. Stewart Systems EkoFill)
(1) quart exterior acrylic latex paint
- Foam brushes, mini rollers, 320 grit sandpaper

Dacron is a trade name for polyester fabric. There are several well know processes for covering aircraft (or telescope enclosures) with this fabric including Ceconite, Stits Poly-Fiber and others. They are all good methods but dated in regards to environmental impact. Many are based on the use of nitrate and butyrate dopes which are very flammable. We chose to use the Stewart Systems method which uses a water soluble latex base. http://www.stewartsystems.aero/

Panels of dacron fabric are cut to size to cover one panel of the enclosure cover and glued around the edges using a latex-based contact cement. Once a panel is in place, it can be heat shrunk using a household iron (at least an old one!). The temperature of the iron has to be established with a kitchen thermometer at about 250f.

Once all of the sides of the enclosure have been covered and heat shrunk, 3" reinforcing tape is glued along every seam or edge and later smoothed with the iron.

The fabric is sealed, primed and protected against UV with 8 coats (1 quart) of Stewart Systems EkoFill. The first two coats are brushed on with a foam brush at 90 degrees to each other (called a cross-coat). The remaining 6 coats can be rolled on using a foam roller and brushed using cross-coats as well.

Finally, the cover can be painted with an exterior latex enamel house paint, applied by spray or a roller.

To make the process a little easier, Dan's Pier Top Plates offers a pre-sewn Dacron envelope kit with reinforcing tape that can be slid over the entire finished cover. The envelope wraps around the bottom and is glued and then shrunk all at once. These instructions refer to the use of this cover.

Stewart Systems makes a very fine, heat-activated contact cement which may be used instead of a more economical brand such as DAP Weldwood. We have tested the DAP Weldwood NonFlammable contact cement product and have found it to be quite compatible with the Stewart Systems latex-based fabric filler EkoFill. It is important that all of the products used are compatible water-soluble and latex-based.

More information about the Stewart Systems method can be found in their online manual available at: http://www.stewartsystems.aero/support.aspx

Dacron Covering (continued)

Remove the latches, strikers and handles.

Carefully slide the Dacron envelope over the cover. Avoid snagging the envelope on the aluminum corners. If you are concerned about any remaining sharp edges, additional aluminum tape should be applied to those areas before sliding on the envelope.

The Dacron envelope will be somewhat baggy. Apply contact cement using a brush through the fabric as shown in Figure 56. Adjust the inside seams as necessary so that they naturally straddle the edges of the cover. Wipe off excess cement as you go.

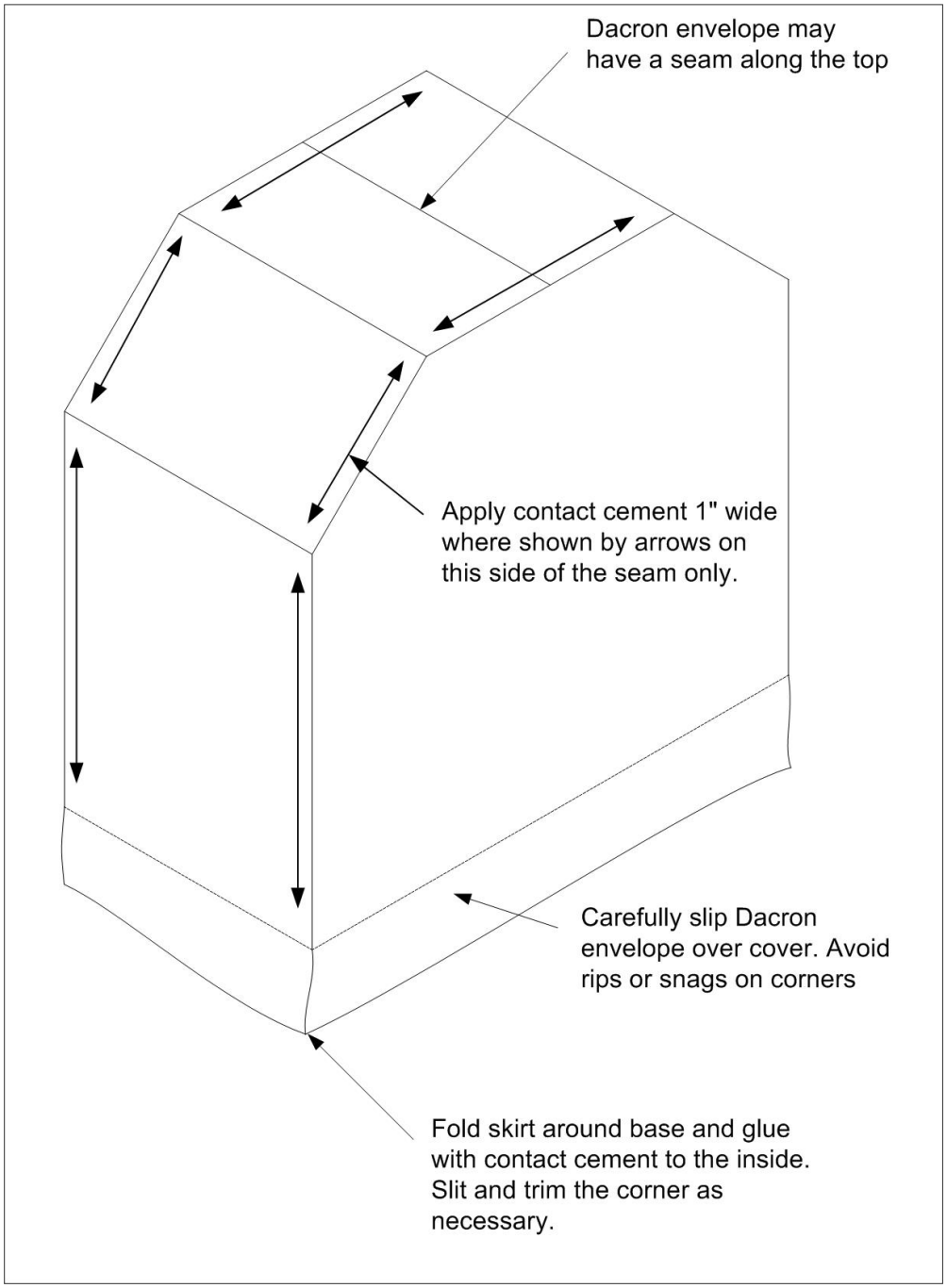


Figure 56

Allow to dry. Turn the cover over and wrap the dacron and glue to the inside. Slit the envelope on the corners and trim as necessary.

The envelope will be baggy but will straighten nicely when it is ironed in the next steps.

Allow to dry.

Using an old household iron, establish a working temperature of 250f. Although the dacron can be shrunk using a much higher temperature, the foam board will melt at higher temps.

Run the iron over the cover. Shrink evenly a small section at a time and alternate from side to side and top to bottom. Ensure that the shrinkage is even and that the seams of the envelope run roughly along the edges of the cover.

Dacron Covering (continued)

Use 3" Dacron tape to reinforce all edges and seams as well as the holes for handles, strikers and latches.

Fold the tape and crease before glueing to the edges. Trim to the proper length with scissors. Brush contact cement through the fabric. Make sure that all seams overlap to ensure a waterproof finish and apply the top pieces last. See Figure 57.

Allow to dry and use the iron to smooth and shrink the entire cover once more.

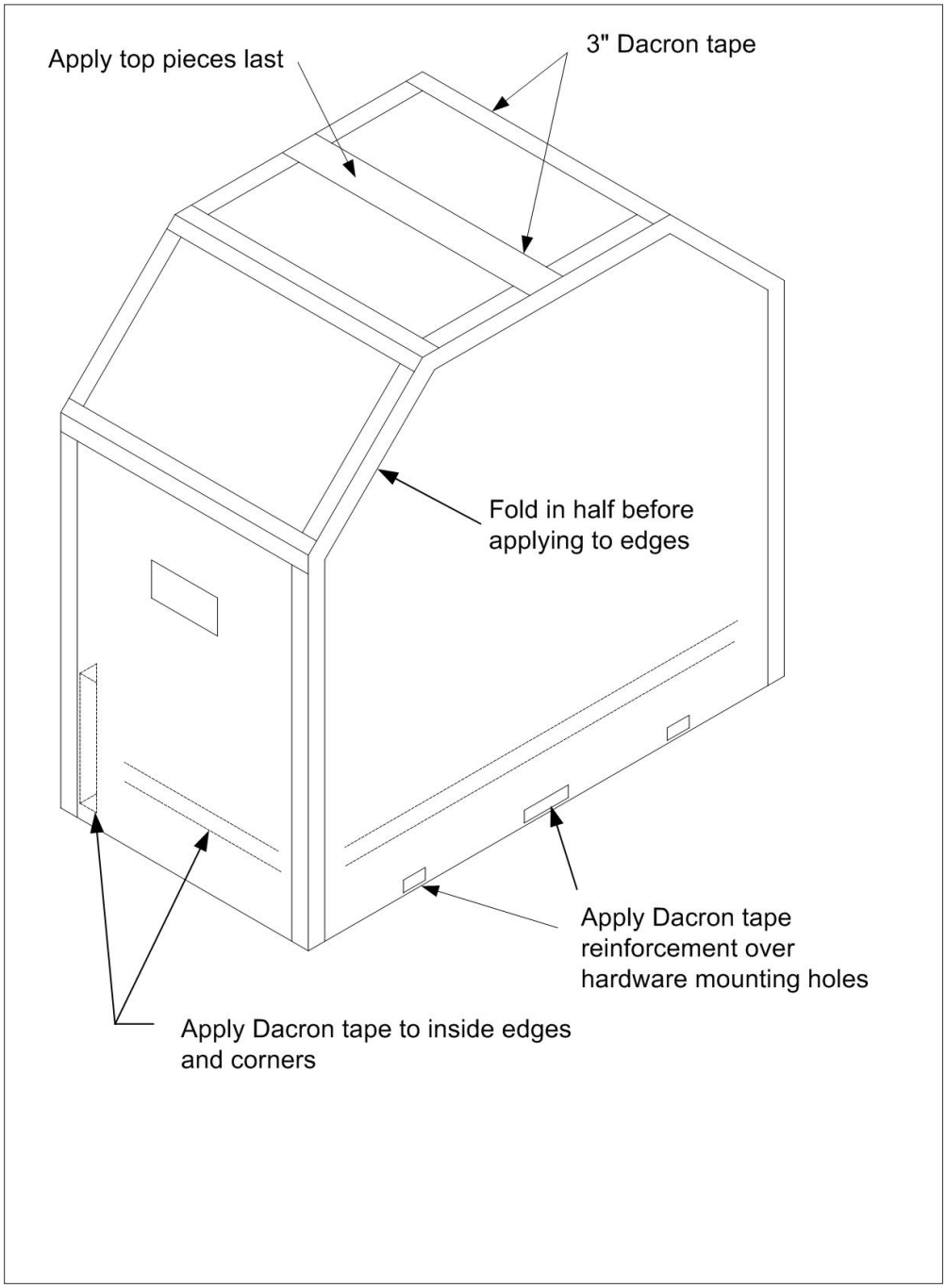


Figure 57

Wipe the entire cover down using a damp cloth to remove any dust.

Use foam brushes to apply the EkoFill fabric filler and primer.

Apply the first 2 coats of EkoFill using only a foam brush. Stir often. The 2 coats should be applied lightly at 90 degrees to each other. If wet and shiny it is too thick. Do one section of the cover at a time.

Follow the manufacturer's direction regarding drying time and recoating.

After the 2nd coat is dry, lightly sand with 320 grit sandpaper. Sand the pinked edges of the reinforcing tape and use the iron to shrink any areas that need tightening.

Dacron Covering (continued)

Apply 6 more coats of EkoFill alternating the applications by 90 degrees. These coats may be rolled on using a mini roller but should be followed by brushing with a foam brush. They can also be applied with a sprayer.

The cover should be sanded with 320 or 400 grit sandpaper between every other coat and then wiped with a damp cloth.

If you use the entire quart of EkoFill before the 6 coats are finished, consider it done.

After the final coat, sand and clean once more.

The cover can now be painted with any combination of exterior acrylic latex house paint. It can be rolled on or applied with a sprayer. The EkoFill is a suitable primer and therefore no additional primer is necessary. Using a light color such as white or a reflective metallic color will greatly reduce the amount of heat build-up that can occur inside the enclosure.

Allow to dry and replace the latches, strikers and handles.

The neoprene foam weather stripping has a tendency to stick to newly painted surfaces in warm temperatures. Rub vasoline or paste wax onto the neoprene foam to prevent this from happening.